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TREATMENT OF HERNIA IN CHILDREN.*

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CHICAGO.

During the past few years the interest in this subject has increased very greatly. In this country the first real impulse was given to the surgical treatment of hernia in children by the excellent paper of William B. Coley, which was based on an extensive personal observation. This has since acquired remarkable dimensions, as is shown by the paper of Bull and Coley, which appeared during the past year. In England the subject has been discussed at length, especially in the British Medical Association, by Langton, Eccles, Campbell, Harrison, Heaton, Owen, Parker, and many others; and on the continent Broca, Mugnai, Fraenkel, Felizet, Lucas-Champonnière, Tillmann, and others urge the operative treatment as applicable to a large proportion of all cases of hernia in children.

That operative treatment is indicated in strangulated hernia in children was recognized many years ago, although the prognosis was much less favorable in the preantiseptic time. During the early part of the last century Lawrence reported a successful operation for this condition in a child 14 months old. Robert Adams operated on a child of 18 months, Pantin on one in the second month, Hunt on one only twenty-nine and Dupuytren on another twenty days old; Goyrand successfully operated on a hernia in a child of 4 months, which had been strangulated for three days; Cæsar Hawkins operated in the seventh week, Roux on a child 2 years of age, Lawrence on three very young children, successfully, and Erichsen reports one unsuccessful attempt.

For several years I have had an opportunity of observing an unusually large number of these patients in my clinical work at the Augustana and St. Mary's hospitals of this city. One of these institutions belongs to the Swedish, the other to the Polish people, and both of these nationalities are very numerous in the territory tributary to these hospitals, and in case an operation is advised on a child belonging to either nationality, it is usually brought to one or the other of these institutions, thus coming under my observation. Unfortunately, it has not been possible up to the present time to follow all, or even a large proportion, of these cases for a number of years, because of the frequency with which they change their places of residence; hence, my experience can have no value from the standpoint of reliable statistics, but I believe that as a matter of clinical observation this experience is undoubtedly of some value.

I have chosen the foregoing subject for this paper because it has seemed to me that a discussion of it by the Surgical Section of the AMERICAN MEDICAL ASSOCIATION must necessarily be of great profit at the present time. Everywhere herniæ in children are being treated surgically, the results being more satisfactory even than in adults, both as regards permanency of cure and safety of the operation. If a careful consideration of the subject shows that the same indications exist in children as in adults, then this form of treatment should be encouraged; if, on the other hand, it seems clear from past experience that most of these patients will get well without an operation, then it will be necessary to determine the conditions on which a selection of cases for operative treatment must be based.

It has seemed to me proper to refer here to the extensive statistics collected by Malgaigne fifty years ago, with which every surgeon is familiar, which show that there is one hernia for every twenty-one children during the first year of life, that this proportion remains true up to the age of 6 years, that then there is a rapid decrease until there is but one hernia in seventy-seven children at the age of 13. During the following years there is constant and rapid increase in the male, so that at the time of recruiting the armies, which occurs at the ages of 20 to 21, there is one hernia in thirty-two males. In the female there is no further increase until the beginning of the childbearing period, when there is at once quite a sudden one in the number. At the age of 28 there is one hernia for 21 persons; at the age of 30 to 35, one hernia for 17; at 35 to 40, one for 9; at 50, one for 6; at 60 to 70, one for 4, and at 75, one for 3. From this age on the patients suffering from hernia seem to die more rapidly than the remaining proportion, so that from the age of 80 to 85 there is but one hernia in fourteen persons, from 85 to 86, but one in twenty-three, and of those whose age exceeds 86, but one in fifty-six. It is plain, however, that the only time at which we can be absolutely certain that the statistics are correct is at the age between 20 and 21 in the male, because at this time all the males are actually examined by competent surgeons.

Many other interesting statistics exist, of which those of Wernher and Macready seem especially valuable, but the foregoing are sufficient for the purpose of this paper, as the different statistics do not vary to any great extent in the important facts bearing on the treatment of hernia in children, namely, that without surgical treatment over 75 per cent. of all herniæ heal spontaneously before the child has reached the age of 12 or 13 years; also that at this age and during the following six or eight years there are almost no herniæ in girls, while in boys there is a very rapid increase during this period, a condition which has been attributed to the fact that during these years girls are generally well cared for among all classes, while boys learn their trades, indulge in rough sports and are likely to exert themselves beyond their strength.

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If the relative number of herniæ changes from one in twenty-one children up to the sixth year of age to one in seventy-seven at the age of 13, 73 per cent. of all children suffering from hernia at the age of 6 must have healed spontaneously by the age of 13, even if there were no herniæ formed at all during this period. This, however, is not the case, as more than one-half the life of these children has in the meantime been spent, and everyone who treats such cases knows from personal experience that many of the children coming under observation between the ages of 6 and 13 are suffering from herniæ of recent date. Consequently, it is certain that much more than 73 per cent. of all herniæ at the age of 6 heal spontaneously before the child is 13.

Berger's statistics are interesting in that they show the relative number of herniæ which have continued from childhood. Of 9967 adults with hernia, only 479 gave a history of having suffered from this condition since childhood. Bull and Coley's statistics show almost identical proportions: out of fifteen thousand adults with hernia, only 700, or less than 5 per cent., had been ruptured since childhood. This proportion is borne out in a remarkable manner by the fact that the four hundred cases which the latter authors had selected for operation were chosen from eight thousand children suffering from hernia.

It is worthy of note that Malgaigne's statistics were collected fifty years ago, at a time when, with the few exceptions noted above, no herniæ in children were treated surgically and, in fact, very few of these received any form of treatment. Judging from these and other statistics, it seems reasonable to conclude that probably 95 per cent. of all herniæ in children will heal spontaneously, or at least without surgical treatment, if proper conditions are secured. This has also been borne out by my own experience. In explanation of this fact, a description of the changes which take place as the child outgrows its hernia, in an interesting paper by Thomas Charles Martin, has seemed of especial interest to me. He shows that in the broadening of the pelvis the parietal peritoneum enlarges at the expense of the mesentery; the latter being thus shortened prevents the entrance of the intestines into the inguinal canal. At the same time there is a displacement of the internal ring, which still further aids in curing the hernia.

Primarily, the natural defect which results from the descent of the testicle through the inguinal canal must be considered a most important predisposing cause, which accounts for the much greater frequency of inguinal hernia in the male than in the female. Next to this comes a further increase of a tendency to the formation of hernia due to an inherited weakness in the structures of the abdominal wall. Macready places this hereditary defect at 25 per cent. of all cases, while Kingdon agrees with Malgaigne in placing heredity as an important factor in 33 per cent. of all cases.

It is doubtful whether the long mesentery is primarily a predisposing cause, or whether it occurs secondarily from the stretching which results from gaseous distention due to digestive disturbances.

Bertillon and others have proved that the number of herniæ in the offspring of the poorer classes is much greater than in the well-to-do; hence it is clear that there are conditions of very great importance aside from the anatomic causes.

ABNORMAL INTRA-ABDOMINAL PRESSURE.

There can be no doubt that the most important direct cause of herniæ in children is an abnormal intra-abdominal pressure, as pointed out by Eccles, Langton, and others. This may be due: 1, to gaseous distension of the stomach and bowels, caused by faulty feeding and consequent indigestion; 2, to great pressure exerted during the act of defecation, on account of constipation; 3, to the same condition due to obstruction on account of phimosis; 4, to severe vomiting; 5, to long-continued coughing. In connection with all of these conditions, it is to be remembered that children suffering from digestive disturbances necessarily suffer much from pain, and the exertion incident to crying will greatly increase the existing abnormal intra-abdominal pressure. In order to quiet the child the mother will nurse it at irregular intervals and this will again increase the digestive disturbances, and this, in turn, the intra-abdominal pressure and pain.

INCREASED INTRA-ABDOMINAL PRESSURE DUE TO COUGHING.

I have observed cases in which the herniæ healed regularly during the summer months, but reappeared in the autumn as soon as the children acquired coughs which lasted almost all winter. By the time spring arrived the herniæ had attained considerable size, only to heal again during the summer, while the patients were free from coughs. By placing these children in bed and elevating the lower end sufficiently to make an angle of 20 degrees, giving them remedies to relieve the cough, the herniæ disappeared within six weeks. Then advising the mothers to give the children cold baths every day, and to bring them for inspection often enough to keep the condition under control, and giving them cod-liver oil and malt extract as soon as the cold weather appeared, they went through the next winter without coughs and consequently without a recurrence of the herniæ. In the same manner children who are suffering from obstruction to the upper air-passages, on account of enlarged tonsils, nasal adenoids or polypi and consequent conditions, will rapidly recover from their herniæ if these conditions are relieved by proper treatment.

INCREASED PRESSURE DUE TO GASEOUS DISTENSION.

It is very usual for the children who are brought into the hospitals for the treatment of hernia to have greatly distended abdomens, due to digestive disturbances resulting in gaseous distension of the stomach and intestines. If this occurs in nursing infants, the mother should be instructed to nurse the child at regular times. Her own habits and diet should be regulated. If the child is constipated, this condition should be relieved. Aside from this, the mother must be instructed never to carry the child, because she will not follow the advice of keeping it in the inverted position and, consequently, will increase the intra-abdominal pressure whenever she picks up the child. It should sleep in a separate bed with the lower end elevated sufficiently to make an angle with the floor of about 20 or 30 degrees. This will keep the hernial sac empty of intestines and omentum and will very greatly assist in the obliteration of the hernia. If the mother's milk continues to give rise to indigestion, notwithstanding every precaution available for making it wholesome, it is often best to place the child partly or wholly on artificial food, at least for a time. Above all things, however, it is important to impress the mother with the necessity of being regular in feeding the child, and to again place it in its bed as soon as it has been nourished, or, better still, to lean over the child's bed and nurse it without disturbing its inverted position.

I have repeatedly placed these children in the hospital and sent the mother, who was exhausted from overwork and care of the sick child, home to rest, permitting

her to come to the hospital morning, noon and night to nurse the child. After the first day or two the mother becomes rested, her journeys to and from the hospital compel her to be out-of-doors, and the fact that she is relieved of the care of the child gives her the necessary rest and sleep. In the meantime her milk improves, the child becomes accustomed to lie quietly in bed and to take its nourishment regularly, its digestion is improved, the gaseous distention disappears and with it the abnormal intra-abdominal pressure, which is still further relieved because the child sleeps most of the time and seldom cries. After the child has been in the inverted position for a few days the hernial sac remains empty so long as it remains in this position, even if the child strains and cries.

INCREASED INTRA-ABDOMINAL PRESSURE DURING DEFECATION, DUE TO CONSTIPATION.

Children suffering from hernia should not be allowed to become constipated, because the increased intra-abdominal pressure necessary to accomplish the evacuation of the bowels in constipation in itself is sufficient to prevent a hernial opening from closing. This is one of the most common causes of hernia in children, and one of the easiest ones to be eliminated.

INCREASED INTRA-ABDOMINAL PRESSURE DUE TO OBSTRUCTION TO THE PASSAGE OF URINE AS A RESULT OF PHIMOSIS.

That phimosis is a frequent cause of hernia in children is plain from the fact of the greater frequency of umbilical hernia in male than in female children. The greater frequency of inguinal hernia in children can readily be accounted for by the difference in the anatomic structures, but this is not the case in umbilical herniæ, which are shown statistically also to be more common in male than in female children.

It has lately been suggested that phimosis can not be an important cause of hernia in children, because if this were the case the Jewish nation must necessarily be much freer from hernia than others. This is, however, not the case. In fact, it has been shown by statistics, especially in Russia, that at the age of 20 to 21 proportionately more Jews than Christians are afflicted with hernia. Eccles, in an article on this subject, has laid stress on the uselessness of circumcision for the cure of hernia, his argument being based on the fact that Jews are no less likely to have hernia than Christians. Krassnow found, on examining recruits from two departments for the Russian army, that there were, relatively, five times as many herniæ in the Jews who presented themselves for examination as in the Christians. A number of the former confessed that they had produced their herniæ artificially in order to secure rejection from military duty. Granting this to be the cause of the great increase, it could have no bearing on the number in Jewish patients in America and England, where there is no compulsory military service. This, however, can be explained by the fact that the Jews are more subject to hereditary diseases of all kinds, on account of the system of intermarriage in families.

If the phimosis is relieved, either by circumcision or by dilatation of the prepuce, and the child kept in bed for four to six weeks with the foot of the bed elevated, the hernia will almost invariably be cured. During the same time the diet and the bowels must be carefully regulated, and it is doubtful which of these three means has been of the greatest importance in obtaining a cure. It is surprising how rapidly the opening will contract under these conditions. Moreover, during this time the patient acquires regular habits which can afterward be easily maintained if their importance is explained to the mother, and especially if it is impressed on her that by following the directions, which will naturally appeal to her on account of their simplicity and reasonableness, she will be able to make operative treatment unnecessary.

That all of these conditions are of the greatest importance can be demonstrated practically, with the greatest ease, by comparing the relative frequency of hernia in children of the very ignorant poor, of the intelligent poor, and of the well-to-do. In the former class, after the child is weaned but little attention is given to its diet, to the condition of its bowels, and to the condition of the prepuce in boys, and consequently herniæ are very common, while they are much less common in the second, and still less so in the third class, as has been shown by Bertillon, from carefully compiled statistics, and is a matter of experience with every surgeon who treats these various classes.

STRANGULATED HERNIA IN CHILDREN.

If a strangulated hernia in a child can not be easily reduced, under complete anesthesia, by taxis, the child being held in the inverted position during the manipulations, it is undoubtedly wiser to relieve the conditions by an operation, because the intestinal wall in children is very delicate and easily injured by taxis. In my experience the hernial opening has always been very narrow; still, I have always succeeded in replacing the hernial contents without enlarging the opening by first drawing out more intestine and then gradually replacing it, the child being placed in the inverted position.

If the hernia is an acquired one, which is not common in children, the sac is carefully dissected free to a point within the abdominal cavity. It is then ligated and removed and the ligated stump is permitted to retract into the peritoneal cavity.

If the hernia is congenital it is best to dissect up the neck of the sac for about an inch, and I leave the portion surrounding the testicle to form tunica vaginalis, while the upper portion is carefully dissected up to a point within the peritoneal cavity; it is then ligated, the superfluous portion is cut away and the stump is permitted to retract into the peritoneal cavity, as in case of the acquired hernia. It is thus only necessary to close the skin and the opening will close completely in from four to six weeks if the child is kept in bed with the foot of the bed elevated. R. H. Russell gives in support of this simple operation the fact that inguinal hernia in children occurs because of the presence of the hernial sac, which has remained after the testicle descended into the scrotum. Consequently, all that is required for the purpose of curing this hernia permanently is to completely remove this sac. His experience as to results seems to justify this view. H. O. Marcy has for many years repeatedly directed attention to this condition. That equally satisfactory results can be obtained by following Bassini's or Halsted's method can easily be seen, especially from the statistics of Coley, and those of Halsted. However, Funke and others have noticed severe atrophy of the testicle following herniotomies in children, in which an attempt was made to close the inguinal canal.

If it is possible to reduce a strangulated hernia in children by taxis, the irritation caused, primarily by the strangulation and secondarily by the manipulation, seems to favor closure of the hernial opening. I have repeatedly seen this occur within six weeks if the child was kept in bed in the inverted position.

The most unfavorable cases are those in which the abdominal walls are congenitally weak, a condition which seems to be hereditary in many patients. Again, of these cases, those in which there are three distinct areas of weakness—the abdomen of three hills described by Malgaigne—seem to be least favorable of all. In this class surgical treatment may become necessary, and here it is well to perform the typical Bassini or Halsted operation, or that described by Ferguson at the meeting of the AMERICAN MEDICAL ASSOCIATION in June, 1899, the important point in the operation being to secure an accurate closure of the inguinal canal to make up for the natural deficiency in the tissues. Two precautions should be borne in mind: 1. The stitches should be tied very loosely, in order not to cause pressure necrosis of the already weakened tissues. 2. The tissues of the cord in the male should be manipulated very carefully for fear of causing an atrophy of or preventing the full development of the testicle. This is especially important in these cases, because herniæ in this class of patients are very likely to be double, and if both testicles should atrophy the patient would be permanently injured. In this class very frequently no truss will retain the hernia.

REDUCIBLE HYDROCELE.

It is not uncommon to find a hernial sac closed opposite the internal inguinal ring and the portion beyond distended with fluid in the inguinal canal, preventing the closure of the latter opening. It is, of course, impossible for the patient to wear a truss, and unless the fluid is removed this can not heal. Simply making a small incision over the inguinal canal, ligating the upper end of the sac opposite the internal ring, cutting it away beyond this ligature and closing the wound in the skin has, in my experience, invariably and permanently cured these cases. In a number of these I have obtained the same result by tapping the sac and injecting five drops of 95 per cent. carbolic acid, but the other operation seems preferable.

There is but one other condition which justifies the operative treatment of hernia in children, and that is when, on account of adhesions, the hernia, although not strangulated, is still irreducible. In this class of hernia a truss can not be worn with benefit, because it presses on the hernial contents, usually omentum, instead of the empty canal; moreover, the opening not being empty its closure is necessarily impossible unless the adhesions are absorbed, which, if occurring at all, necessarily require a long space of time. In this variety of hernia, unless it be complicated with the form just described, it is not necessary to do anything further than in case of strangulated hernia. The hernial sac being removed, the opening will again close spontaneously.

In operation for relief of femoral hernia in children it is never necessary to do anything beyond dissecting out, ligating and cutting away the sac, permitting the stump to retract into the peritoneal cavity, and closing the skin. These cases are exceedingly rare. I have never seen a strangulated femoral hernia in a child, and only once an irreducible one due to an adherent omentum, which necessitated an operation.

USE OF TRUSSES.

Too much stress has been laid on the importance of trusses in the treatment, and too little on removing the causes, of hernia in children.

It is far easier to retain a hernia and thus encourage the closure of the hernial opening, by first relieving the abnormal intra-abdominal pressure and then applying the truss simply as an aid, than it would be to accomplish the same object by the use of the truss alone.

If it is at all possible it is always best to place the child in bed in the inverted position and to reduce the intra-abdominal pressure by the methods which have been described above, before making use of a truss at all. Then, if it is not possible to maintain this position sufficiently long to obtain a cure it is well to apply a perfectly-fitting truss.

The fact of using a truss does not make the other precautions unnecessary. The child should still be cared for so as to remove abnormal intra-abdominal pressure from every cause, and the foot of its bed should still be elevated in order to make use of gravity in keeping the hernia empty and to facilitate the shortening of the mesentery.

My observations and a study of the available literature on this subject have led me to accept the following conclusions:

1. The development of herniæ in children is favored by: *a*, faulty development of the abdominal wall; *b*, insufficient strength in the tissues involved in closing the umbilical, inguinal or femoral openings; *c*, abnormal intra-abdominal pressure; *d*, unclosed condition of the tunica vaginalis.

2. The causes *a* and *b* are likely to be inherited.

3. The abnormal intra-abdominal pressure is due: *a*, to gaseous distension resulting from improper feeding; *b*, to the exertion necessary to accomplish defecation in case of chronic constipation; *c*, to the same exertion necessary to evacuate the bladder on account of obstruction due to phimosis; *d*, to severe, long-continued coughs.

4. A large majority of all cases of hernia in children will heal spontaneously if the increased intra-abdominal pressure is relieved, the hernial sac being kept empty.

5. This can be accomplished by means of trusses or, much more rapidly, in inguinal and femoral hernia, by placing the child in bed with the foot of the bed elevated, the time required usually not exceeding six weeks.

6. Children with a tendency to the formation of hernia should be guarded against developing coughs.

7. Their diet should be given at regular times and chosen with a view to avoiding gaseous distension.

8. Constipation should be entirely prevented.

9. In case of boys, phimosis should be relieved if present.

10. Badly nourished and badly cared for children of the poor should be treated in hospitals, being placed in bed in the inverted position, the cause of increased intra-abdominal pressure being removed at the same time by proper treatment.

11. Operation is indicated *a*, in strangulated hernia; *b*, in irreducible hernia due to adhesions; *c*, in case the opening is unusually large in a free hernia, especially if the condition is hereditary and the hernia can not be retained by means of a truss; *d*, in reducible hydrocele.

12. Except in Class *c*, the operation should consist simply in carefully dissecting out the sac, ligating it within the abdominal cavity, cutting away the sac and permitting the stump to retract within the abdominal cavity, and simply closing the wound in the skin.

13. The recumbent position, with the foot of the bed elevated, is of very great importance in the operative as well as in the non-operative treatment of herniæ in children.

14. If the child can not be kept in this position sufficiently long, a well-fitting truss should be worn night and day until there has been no protrusion for at least six months, at the same time the necessary precautions

being constantly taken to guard against intra-abdominal pressure from any cause.

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IMPROVED TECHNIQUE FOR THE CURE OF VENTRAL HERNIA.*

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According to Gross, "ventral hernia is a hernia involving the parietes of the belly, which are rendered defective in consequence of a wound, or accidental separation of some of the muscular and tendinous fibers."

CAUSATION.

The essential factor in the production of these herniæ is a deficiency in the fibrous aponeuroses which give strength to the abdominal walls. (Kelley.) Dr. Henry O. Marcy says that as a result of the surgical division of the abdominal wall, it may occur from defective union in consequence of improper closure of the parts, and Spencer Wells points out the fact that operators have often failed to include the peritoneum in the line of sutures. Another and not infrequent cause is found in the imperfect or non-union of a portion of the abdominal wall from the use of the drainage-tube and from stitch abscess and long incisions.

A review of 340 cases of ventral hernia following abdominal incisions showed that, in the great majority, the wound healed by granulation (Bull and Coley), while Dr. P. Assmy wisely assigns division of the motor nerves as the cause of ventral hernia following extra-median abdominal sections. In these incisions, parallel or nearly parallel to the linea alba, the terminal branches of the intercostal nerves supplying the rectus muscle are divided. There is no anastomosis with the nerves of the other side, and in all probability none with neighboring nerves. Consequently, that part of the muscle distal to the nerve loses its innervation and undergoes paralysis and atrophy. In the further development of a hernia, the atrophic and hence unresisting portion of the abdominal walls is protruded in response to intra-abdominal pressure.

Dr. Andrew F. Currier mentions a lowered vitality from tuberculosis, syphilis, chronic alcoholism and fatty degeneration at the menopause, or prolonged drainage, as a predisposing cause.

FREQUENCY.

Dr. John Homans says that he is surprised to find that thirty women out of over three hundred, undergoing abdominal operations, have ventral hernia—nearly 10 per cent.

Dr. H. O. Marcy finds that it is variously estimated by different authors that ventral hernia follows the closure of the abdominal wound, after laparotomy, in from 5 to 10 per cent. of the sum total of cases.

PREVENTION.

Since Dr. H. O. Marcy has adopted the method of closing the abdominal wall in layers, with buried sutures, in over one hundred cases of laparotomy, he has had but one case of ventral hernia.

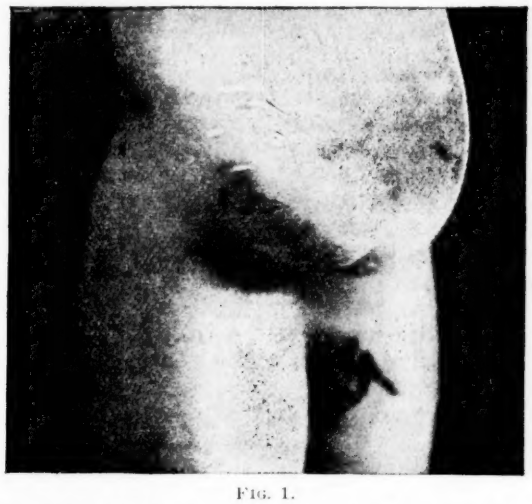

FIG. 1.

Dr. Charles P. Noble finds that closing the abdominal wall in three layers, and suturing the aponeurosis of one side on that of the opposite, making a flat seam, by an alternate up and down stitch, has been valuable in preventing hernia.

Dr. William J. Mayo states the surgical principle involved in closing the abdominal wall in the following: "The ingenuity wasted in dealing with the peritoneum has been enormous, the formation of buttresses, or peculiar method of handling a membrane, which is notoriously impotent to aid in holding back the protrusion is a waste of time."

The only object in view is to prevent this membrane from insinuating itself between the muscular and aponeurotic structures, and preventing the union of the real retention agents.

A careful study of the anatomic structure of the parts involved, and the technique of different operators, has led me to adopt the method of operating which I now present to you.

TECHNIQUE.

Ventral herniæ may be considered as median and extramedian, the former following median abdominal in-

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cisions, the latter resulting mostly from operations for appendicitis.

An elliptical incision is made a little within the border of the opening in the abdominal wall. This must be done carefully, as there is frequently a loop of intestine adherent to the inner surface of the hernial sac. The skin and superficial fasciæ—if it can be distinguished—is then dissected back, exposing the sheath of the rectus muscle. On the outer side a similar dis-

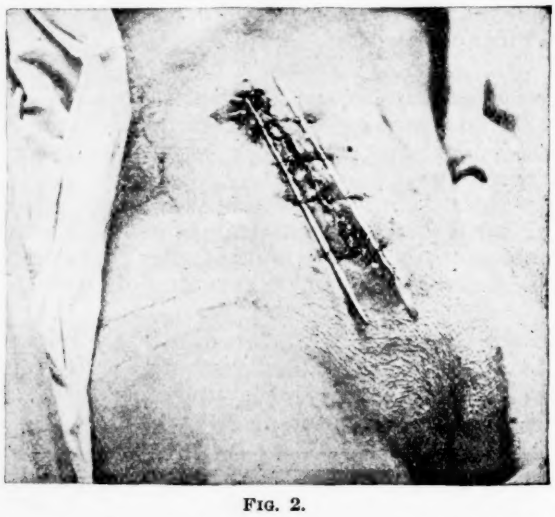

FIG. 2.

section is made an inch or more over the external oblique. The edges of the opening are trimmed and a No. 25 silver wire suture is inserted at the upper angle of the opening by lifting the abdominal wall and passing the needle through the peritoneum, rectus muscle and skin about one inch from the free border of the opening. The needle on the other end of the wire is similarly passed through the abdominal wall on the opposite side. Silver wire sutures are inserted, at intervals of one inch, the entire length of the incision. All the subcutaneous tissues are then united by a continuous kangaroo-tendon suture, and the skin is closed by a continuous suture of the same material.

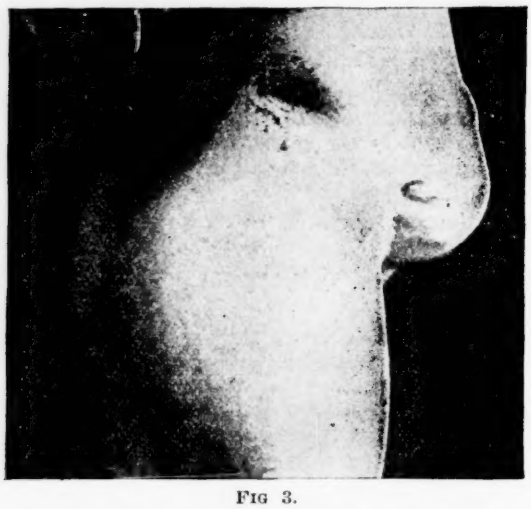

FIG 3.

The deep wire sutures are now taken up one by one, moving them back and forward, to make sure that a loop of gut is not included between the wire and the abdominal wall. The ends of the wire are wound around a pencil or ivory on either side and drawn sufficiently tight to relieve the tension on the kangaroo-tendon stitches. This is the old and nearly obsolete "quill suture" used for a new purpose. Half the wires are removed in ten and the remainder in fifteen days. When the hernia is in the median line the principle is the same. The object is to relieve the tension on the stitches which hold the muscular tissues together until firm union has taken place.

CASE 1.—This case illustrates the extramedian operation. The patient, a boy 6 years old, came under my care at the St. Francis Hospital, on Oct. 3, 1897 to be

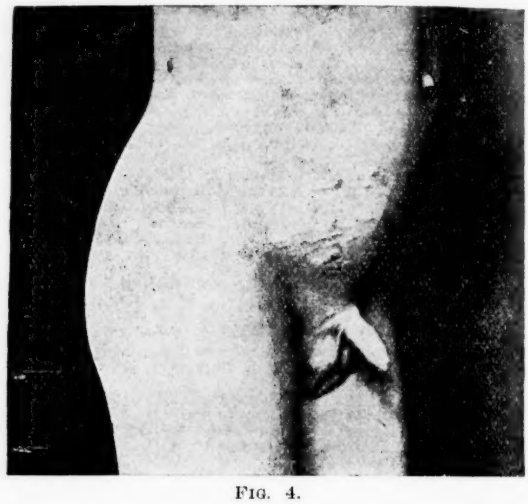

FIG. 4.

treated for ventral hernia. He gave the following history: July 17, 1895, he was operated on for suppurative appendicitis at the Hartford Hospital. A few days later perforation occurred. He remained in the hospital thirteen months, and during this time four more operations were performed to close the perforation, the last, by Dr. Wiggin, of New York, was successful. During his treatment at the hospital a rubber drainage-tube was lost in the abdominal cavity. Later an abscess formed in the lumbar region, just above the brim of the pelvis; when the abscess broke the drainage-tube came out.

Here we have a long history of operations, suppuration and drainage. The opening into the abdominal

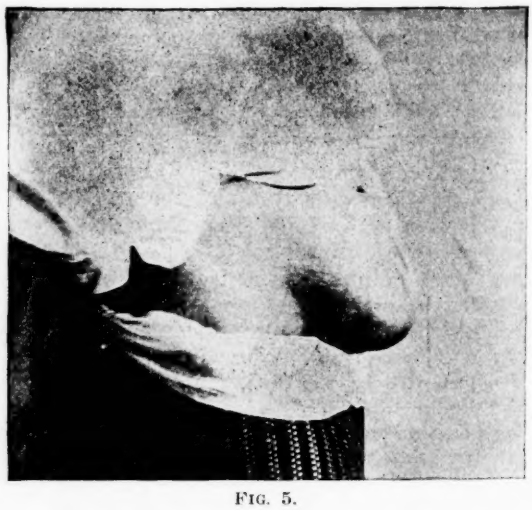

FIG. 5.

wall was 3½ inches long by 3 inches wide. At a consultation, the staff voted against an operation, as there was little hope of success, but the patient was removed to the Woodland Sanatorium, where the operation was performed Nov. 27, 1897. An elliptical incision was made a little within the border of the opening in the abdominal wall, adhesions broken up and the skin dis-

sected back so as to expose the sheath of the rectus muscle. A similar dissection was made on the outer side over the external oblique.

Beginning at the upper angle, four silver-wire sutures were inserted from the peritoneum through the abdominal wall, one inch from the border of the incision on either side. The muscular tissues were closed by a continuous kangaroo-tendon suture, passing through all the subcutaneous tissues, as they could not be separated owing to the long-continued inflammatory and suppurative process. The skin was closed by a continuous suture of the same material. The deep sutures were drawn sufficiently tight to relieve the tension on the stitches through the muscles, and were retained by winding them around an ivory pencil. The patient was placed on a liquid, animal diet to prevent the distension of the viscera. The end wires were removed in ten and the remaining ones in fifteen days, and the patient was kept in bed three weeks, making an excellent recovery. The details of this case have been given somewhat fully to show that it was an exceptionally bad case for a good result. At the end of 2½ years he was photographed and there was no return of the hernia evident.

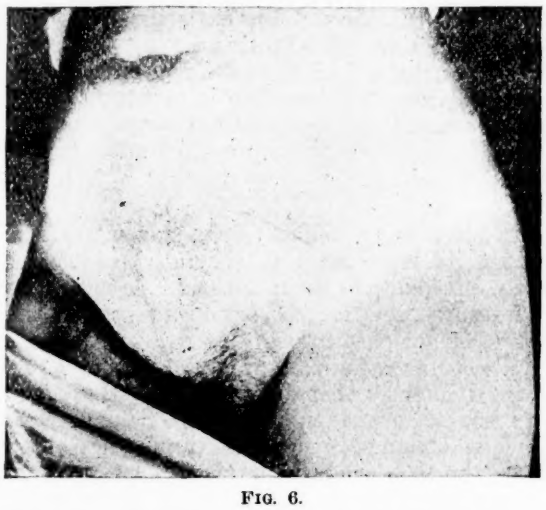

FIG. 6.

CASE 2.—A woman was operated on for the removal of a fibroid tumor of the uterus, Nov. 22, 1894. She was admitted to the St. Francis Hospital, where the operation for the radical cure of her ventral hernia was performed by the writer, Dec. 30, 1898. Fig. 5 illustrates the size of the rupture.

The usual elliptical incision was made, the tissues were dissected back on both sides so as to expose the sheath of the recti muscles, and silver-wire sutures were placed as previously described. The subcutaneous tissues were closed by the usual continuous suture passing through the sheath of the recti muscles. The skin was closed as usual and the deep silver wires were made sufficiently tight to relieve the tension. At the end of ten days the dressings were removed and primary union had taken place perfectly; two of the silver-wire sutures were removed and the rest of the wires five days later. At the end of three weeks she was discharged, fully recovered. Fig. 6 illustrates the condition one year four and a half months after the operation.

The reason for the unsatisfactory results, so frequently following the operations for the radical cure of ventral hernia, in the class of cases where a very long incision is made, thus depriving the rectus muscle of its nerve-supply, followed by a protracted period of suppuration and drainage, attended by a considerable loss of tissue, and a slow closure by granulation, is the strong tension necessary to bring the abdominal walls together, causing a giving way of the tissues before a proper union of the parts has been secured. The technique here described fully meets these requirements and has proved highly satisfactory in a series of these extreme cases.

THE ESSENTIAL FACTORS FOR THE CURE OF HERNIA IN THE MALE.*

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That hernia may be safely cured by surgical intervention is now recognized as one of the special triumphs of modern aseptic surgery. It is scarcely more than a decade since the profession in general discountenanced operation except under very restricted limitations, and the records of all our general hospitals are replete with long series of cases followed by dire disaster, owing to delay in operation for the relief of strangulated intestines in which now a speedy cure would ensue by prompt surgical intervention.

It is not the purpose of this paper to discuss the history of modern operations or the various methods of prominent surgeons, but rather that we may eliminate the non-essentials and emphasize the really important factors which must pertain in order to effect a cure. All forms of hernia except that of the inguinal in the male may be dismissed with the simple statement that they consist of openings through the strong retentive wall of the abdominal viscera, more or less direct, and that the proper closure of these openings is usually a simple procedure which should be followed by primary union and permanent cure.

The inguinal variety in the male is by no means so simple, since here the abdominal opening usually follows the canal through which the spermatic cord and vessels pass. If this opening is normal, is it necessarily a source of weakness? If so, why are not all men subject to hernia? Statistics show that this variety is much more common than that of all others, so common, indeed, that by estimate one in every ten to fifteen male adults is the subject of hernia; over three millions of the inhabitants of the United States are thus, in a greater or less degree, sufferers and incapacitated for hard active service.

If this form of hernia is so universal, to ascertain its cause and the reason of its development is obviously of the first importance. It may be easier of solution to reverse the proposition and inquire why all men are not subject to hernia, or, in other words, what the normal anatomic and physiologic conditions which prevent the escape of portions of the abdominal contents through the inguinal canal are. Since I have reason to believe that this phase of the subject is comparatively little understood and has been rarely emphasized in its proper surgical importance in its relation to the restoration of the structures in order to effect a cure, I must be pardoned in dwelling a little in detail on certain of these factors.

In a way, it seems strange that the testicle should develop within the abdominal cavity, and that by a seeming change of plan, as if an afterthought, it should be extruded therefrom at a period when all the other organs are not alone permanently closed, but in a high degree have completed their development. Why not much better to have permitted their retention within the abdomen, as

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are the ovaries in woman? Far safer from seeming injury, and also in this way short circuit the deposition of their secretion within the vasa deferentia? Again, what a fruitful source of profit to the modern junior surgeon, who would very probably daily seek, by a laparotomy, to ascertain the exact condition of these important organs—of a value second only to their counterparts in women!

Having developed within the abdominal cavity, it becomes necessary in their change of abode that they carry before them a process, or pocket of the peritoneum, which, in the mature normal condition, becomes the tunica vaginalis testis. This necessarily lines the inguinal canal with a delicate intrafolded membrane, which becomes more or less fused with the vessels of the cord and also permits a certain amount of mobility as well as a normal variation of vascularity.

The peritoneal surface opposite to the internal ring, as it covers over the separated component parts of the cord, is described in normal anatomy as the infundibulum processus peritonei, in simple English, funnel-shaped. But, from repeated investigations, I am assured that this is a mistake, that normally there is no funnel-shaped depression, although it may be easily made to appear thus by traction on the cord. As far as I have been able to ascertain, this is traceable to the otherwise very valuable contribution on the subject of hernia, published by Cloquet in 1835.

This author reached his conclusions after dissecting more than five hundred subjects who had suffered from hernia, and it is not to be wondered at that, for this reason, he mistook a pathologic for a normal condition. I am myself assured that the real cause of hernia, in most instances at least, is a lack of the developmental process by the imperfect closure of the internal ring, although it may not show itself as a hernia until the later period of life. This is the more in evidence, since it is only possible by the closure of the internal ring to prevent a more or less constant hydrostatic pressure in the line of the already partially opened canal, the entering wedge ever forcing apart the readily yielding structures.

On the contrary, when the internal ring is closed firmly around the vessels, compressing them upon each other so that the entire abdominal parietes act upon a single plane, the intra-abdominal pressure acts laterally upon the walls of the canal. Note, for example, the extraordinary feats of strength of athletes when these muscles are called into special play. The only other instance in the body where nature avails herself of this mechanical principle is the passage of the ureter through the walls of the bladder, permitting the easy escape of the urine through the ureter, although the fuller the bladder the less the liability of reflux into the kidney. In pathologic conditions where this takes place, it is interesting to note the foreshortening of the ureter in its passage through the bladder wall.

Given a small infundibular process as the first factor in the problem, it is interesting to note that the internal ring, as a rule, enlarges by a depression of its lower border, since the internal abdominal pressure is first brought to bear upon these buttressing structures. These having yielded, little by little the force called into play is now exercised upon the structures of the anterior wall of the canal, but not until these give way is it usual for the patient to complain of inconvenience sufficient to have the attention of the surgeon called thereto. It is very easy for one to demonstrate by a careful examination a foreshortened, slightly dilated inguinal canal brought about by these conditions, of which the subject has never made complaint. Here are conditions ready to become emphasized by some special strain which, instead of producing a valve-like closure of the canal, suddenly gives way because of its loss of obliquity, and the man finds himself "ruptured." In other words, there has been an escape through the dilated canal of a certain portion of the abdominal contents. Given these conditions, the forecast of the man's future is quite clearly in evidence—a retention apparatus, the ordinary truss-bearing individual; conditions becoming more pathologic, brought about by intra-abdominal pressure exercised in the line of its opening instead of at right angles to it, rendering instrumental supports of no avail; usually more or less complete invalidism, or an operation to effect its cure.

The effect of mechanical supports is obvious. By pressure exerted from without inward force is brought to bear almost wholly on the structures external to the inguinal canal. The internal ring is acted on only through this pressure and the deeper structures can not be supported in a way to effect their restoration. Indeed, the more common result of truss pressure is that which pertains to undue pressure in any other part of the body, a weakening of the parts involved, owing to impaired nutrition. It is on this account that it is often unwise to advise a patient to have recourse to a truss, and prompt remedial operative intervention may effect an easy cure and save many of the complications which oftentimes render operation on old herniæ really difficult and formidable, even to surgeons of large experience.

Although to some this may seem elementary, student-teaching, its importance is generally overlooked and scarcely referred to by many authors. So important is it that I regard it as the very key to the possible surgical intervention for effecting cure. Further in our investigation, when an infundibulum pertains, we are to ascertain the structures that are defective. Here again we have recourse to anatomic study. The inguinal canal is rendered oblique in its passage through the abdominal wall by the firm retentive structures which enter into the formation of the lower border of the internal ring and the posterior wall of the canal. This may be described as a direct, slightly elliptical opening through the firm sheath of the transversalis. Its muscular fibers, as they descend toward their pubic attachment, are replaced by a double tendinous interweaving of exceptional strength. Oftentimes the opening through the transversalis is through the lower border of the muscle rather than its tendinous expansion, to-wit, a careful anatomic examination will demonstrate muscular fibers about and below the lower border of the internal ring, and then it may be described as a direct opening through the transversalis muscle. This is not, however, the more common condition, and when found I do not consider that it possesses any material advantage. As far as I am able to learn, the first of the great anatomists who pointed out this extraordinary development of the transversalis fascia and emphasized its physiologic importance was Sir Astley Cooper. So valuable was it considered by his contemporaries that, for a considerable period, it was called the transversalis fascia Cooperi.

It will readily appear that the proper development of these parts is the great bulwark for maintaining the obliquity of the canal and, as a consequence, its defect is the almost universal cause of inguinal hernia in the male. Singularly enough, this has not been pointed out as of special importance in relation to the operation for

the cure of hernia, but on careful reflection, it must be recognized as the first important stable factor in the reconstruction of the inguinal canal to its normal obliquity, by which only is it possible to effect a rational means for permanent cure.

The history of operative measures for the cure of hernia has also an important bearing on this phase of the question. From the time of the Roman surgeons, through the centuries, attempts, by a great variety of operative procedures, were made for the cure of hernia. The open dissection methods finally resolved themselves into two distinct classes. The first was to leave the wound open, packed with charpie or lint smeared with some kind of ointment, and for the most part, that which gave the better result, soaked in spirits of wine, which alcohol we should now class as an antiseptic. This permitted slow granulation and produced a more or less firm cicatrix, a result deliberately aimed at in this later period by Dr. McBurney, of New York.

The other method, and by far the most successful one, was the removal of the testicle and cord, which gave a wound subject to a possible primary closure with far less loss of the firm supporting structures, even if a suppurating wound. Notwithstanding the suffering from large wounds thus made without anesthetics, and the mortality due to infection, this method became so very common that it was at last checked by royal edict, lest the country suffer from the lack of population.

Both these methods, as we readily see, dealt with the deeper supporting tissues of the transversalis.

The earlier procedures of a considerable number of operators, more or less masters in the antiseptic technic, consisted in making an open wound and closing the refreshened structures down to the anterior wall of the inguinal canal. A very important paper by Dr. Bull, of New York, reviewing the history of a large number of cases which came under his observation, following this method of operation, pointed out very correctly that a large majority became recurrent, without making an analytical showing of the cause. The influence of this contribution was so great that it for a time produced a decided reaction against all methods of surgical intervention. At the present time, however, no man is a more earnest advocate of the surgical cure of hernia, and there is none whose experience exhibits a better showing of results than Dr. Bull.

The essentials of operative procedures for the cure of inguinal hernia in the male, regardless of its degree of pathologic deviation, may be classed as follows: First, a wound sufficiently large to bring into easy observation all the factors pertaining to it. This necessitates the removal of the cord from the canal, usually best carried upward and inward, and the free separation of the hernial sac—the opening of the same in order to deal intelligently with its contents. These properly disposed of, the separation of the peritoneum is carried quite within the internal ring, and the sac is closed off at its base and resected. This is best effected by means of a suture, rather than a ligature, since it can not then slip from the enclosing suture. If closed with three or four continuous sutures, the enclosed structures are safely held at rest with only sufficient force to produce approximation, and these should be taken obliquely upward in the line of the reformed canal. If by ligature, the constriction must be much greater in order to prevent slipping, which necessarily lessens the vitality of the parts. I have myself known of one fatal case in which a surgeon of repute closed the sac in this way by a ligature which included an arterial branch not usually found in this locality. The autopsy showed that death was caused by the slipping of the ligature and hemorrhage within the peritoneum.

Next follows in sequence, but already pointed out as fundamental in importance, the reconstruction of the posterior wall of the canal. The structures which should enter into it are best studied by introducing the finger into the abdominal cavity before the closing of the peritoneal sac. In many cases it may be sufficient to suture, from below upward, the transversalis fascia and reform the internal ring by closing the structures closely beneath the uplifted vessels. In large, old, deformed herniæ this will usually be insufficient, and many expedients are resorted to for the reinforcement of these structures. It has been urged by some operators to place all the strong structures of the abdominal wall posterior to the cord, covering it only for external protection by the subcutaneous, non-resistant structures. Theoretically this is at fault, since it substitutes in place of the hernia a direct, although small, opening through the entire resisting parts of the abdominal wall, which opening is in the line of the intra-abdominal pressure, and the cord thus disposed lacks its normal protection, impairing the nutrition and normal function of the testicle. Experience has shown the correctness of this criticism. I have operated a number of times for the cure of recurrent herniæ in which failure had followed this method of operation. The hernial opening was directly through the new internal ring above the cord, and the inguinal canal in its true anatomic sense was wanting.

A very considerable number of ingenious devices have been instituted for the reinforcement of the posterior wall of the canal where atrophy of the parts, incident to old pathologic changes, has supervened, e. g., the transplantation of the pyramidalis, the imbrication of the lateral walls of the canal, the interweaving of the peritoneal folds of the sac with the strong, tendinous fibers of the conjoined tendon with Poupart's ligament, etc. These may all, in certain rare conditions, have a proper place and usefulness in the reinforcement of the parts.

In recent hernia, in which the tendon of the transversalis is of normal development, the intrafolding of the yielding part and suturing quite upon the cord from below upward, in order to reform the internal ring, is sufficient. This may be effected by any method of suturing or variety of suture material, but it is of obvious advantage that an absorbable suture material be used, as the suture must be buried. The intrafolded reenforcement is much more neatly effected and the parts held at rest in easy, unconstricted approximation with much less amount of suture material by the use of a double line of continuous suture where only one knot is requisite.

When, owing to long-continued truss-pressure or other causes, there is great relaxation and defect of structures, I have found it by far the simpler and better way to evert the edges of the conjoined tendon and Poupart's ligament, and with a double continuous suture coaptate their posterior borders and close the parts quite upon the cord from below upward to aid in the reconstruction of the internal ring. This not alone re-enforces the parts with firm resisting structures, but the edges of the tendinous structures thus coapted are everted and aid in forming the lateral walls of the reconstructed canal. Thus the parts are firmly buttressed posteriorly and upon either side, while the canal is restored to its full length, thus insuring its normal obliquity.

It now remains only to replace the cord in the sulcus

thus formed, and close over it to its former relationship, the tendinous expansion of the internal and external oblique muscles. In doing this we again form a firm buttress over against the internal ring, which not alone supports it, but restores the valve-like function of the canal when undue pressure is exerted, which, as we have before stated, is the anatomic and physiologic reason why all men may not become easily ruptured. Here again, and for similar reason, we consider it of first importance to use the absorbable suture. A fine, subcuticular, continuous, buried animal suture closes the wound, which is sealed with iodoform-collodion, reenforced by a few fibers of absorbent cotton. This constitutes the only dressing, and the only restraint enjoined upon the young or old is that the movements of the body shall not bring special strain upon the parts involved.

During the process of repair suffering is so minimized that it may be called discomfort rather than pain. Sleep follows without opium; reading and writing are harmless. The enforced period of retention in bed often serves as a sort of rest cure to the overworked sufferer, who returns to his work at the end of his month of comparative restraint refreshed and invigorated rather than weakened by his sojourn in the hospital.

Primary restoration of the parts, when aseptic, well-vitalized structures are alone involved, without infection, is so assured that it is now accepted, if suppuration occurs, that there has been some fault in the technic. This may never be absolute, but in my own experience, extending over a number of years, 2 per cent. covers this defect.

By a general consensus of opinion, danger is hypothetical rather than real. My entire experience covers thirty years of active surgical practice, and includes about 500 operations on all forms of hernial cases. All have made seemingly easy recovery when the intestine was not involved, and as far as traceable quite 90 per cent. have remained cured. This may be an overestimate, since the relapsing cases are, for obvious reasons, the more difficult to trace.

All varieties of suture material have their advocates and, as a consequence, should be considered among the less essential factors. Some of us are greatly troubled in removing silk and wire buried by surgeons who advocate their use. Only the last week I operated on a patient, from a western state, in whom the defect was traceable to painful sinuses discharging for months, from which I removed large loops of thick silk. Not until the patient was on the operating-table did I learn that suit for $15,000 had been entered against the surgeon who had buried them. This can never be charged as a result of a properly placed aseptic animal suture.

I think my introduction to the profession of the buried animal suture my best contribution to surgery. This was first published in 1871 and was first employed for the cure of hernia in 1870. I used catgut almost exclusively until 1880. For what I considered a good and sufficient reason, about 1875 I discarded silk as a buried suture. After a long search for a substitute for catgut, using the tendons from various animals, in 1882 I found the marvelously beautiful tendons from the tail of the smaller species of the kangaroo. These I have used continuously until the present, and am more than satisfied with their great superiority over other suture material. The collodion seal is a corollary to the buried suture. Not the least value of the suture is that it absolutely obviates the necessity for drainage, permitting the primary closure of the entire wound. The vitalized serous effusions and leucocytic proliferation should be retained as Nature's "first aid to the wounded."

If our science, our theory and practice go for anything, the making and maintaining of an aseptic wound in aseptic and well-vitalized structures is the practical issue sought and to be attained. This effected, with coaptated like structures held at rest by buried aseptic, absorbable sutures, the only factor remaining to complete our ideal technique is a dressing for the purpose of preventing subsequent infection. This is secured so simply and easily by iodoform-collodion, strengthened by a few fibers of cotton, that this dressing reaches an ideal completion. It is fluid-proof in that no exudate can escape from beneath it, and as a consequence it is germ-proof in that it is by no means possible for any foreign material to enter the wound. Beyond this, it holds the approximated structures in even coaptation, at rest, with a certain fixity of support. Water does not loosen it, and it is detached from the vivified cutaneous cells beneath only by the slow separation of the exfoliated epithelium. If for any reason it is needful to remove it, this is easily effected by soaking in alcohol or ether. The late Dr. John P. Maynard, of Dedham, first made the discovery that the cellulose of cotton fiber was soluble in ether and alcohol, and more than forty years ago gave to the profession this very valuable substance called collodion. Early it was applied for the sealing of wounds, those of a slight character oftentimes healing by primary union, under its protection. It was popularly called "artificial cuticle," but naturally fell into disuse because, when it covered septic wounds it was in the highest degree harmful.

Iodoform is soluble in it and is not injurious to it, and ordinarily it is of little additional value. Under certain conditions I believe it to be inhibitory to the development of the micrococcus albus in the proliferating epithelium, and quite as valuable in this direction as the silver salts, which are much more difficult of application. To one who may doubt the efficacy of a potent agent seemingly locked up in a collodion film, we need only to cite the powerful vesiculating effect of the cantharidal collodion. A wound made and maintained aseptic in well-vitalized structures, held at rest in easy coaptation by buried tendon sutures, will be followed by non-inflammatory primary union.

The fear, the anxiety, the constant supervision and watchfulness of nurse and attendant are entirely obviated. Wound supervision is finished before the patient leaves the surgery. Subsequent dressing is of no avail except to keep the parts from extraneous injury. The work of the surgeon for good or ill has its finality at the single period of manipulative intervention.

The surgeon freely profits by the vast contributions of those who have preceded him. It should be his inspiration to contribute as he may be able to this storehouse of knowledge. The individual counts for little, but fundamental principles are enduring. For more than a quarter of a century I have endeavored to emphasize with greater or less clearness the anatomic and physiologic foundations upon which it is alone possible to reconstruct the parts involved in inguinal hernia in the male. These may be epitomized essentially as follows: 1. Free dissection of the parts under aseptic conditions. 2. The proper disposition of the hernial contents. 3. Suture and resection of the sac. 4. The reconstruction of the inguinal canal to its normal obliquity. 5. The buried animal suture, preferably tendon, is absolutely essential in order to effect this. 6.

The closure of the wound without drainage. 7. Protecting the wound with iodoform-collodion seal, and the application of no other dressing.

DISCUSSION ON PAPERS OF DRS. OCHSNER, JOHNSON AND MARCY.

DR. W. B. DEGARMO, New York City—I consider the first paper a very important one. Children are certainly entitled to a cure, but the question still remains under discussion as to how. I think the author has gone over the subject thoroughly. An important predisposing cause of hernia in children is the persistence of communication between the cavity and the cavity of the abdomen, which Dr. Marcy so clearly pointed out years ago. I think it is a predisposing cause not only in infancy, but rather late in life, and I have seen what we call congenital hernia occurring as late as 21 years. Many of us carry the defect through life. As to the immediate causes, I have developed views which are at variance with the text-books, for in my opinion the most important immediate cause at all ages is constipation. This may not be borne out by the experience of others, but it is certainly true so far as my observation goes. I endorse the list of operative cases as formulated by Dr. Coley, but I hesitate to operate on children under 5 years of age, as I think 95 per cent. of them may be cured by a truss. There is no reason why we should not operate on them, except our natural feeling against operative measures on infants. I can not endorse the treatment of hernia in children by confinement to bed, as they depreciate in health so soon as they are placed there. There are very few cases that can not be treated with the truss and the child be allowed to play around.

As to operative treatment, the method I prefer is Bassini's. The subject of ventral hernia, it seems to me, has been very thoroughly covered. We should stitch up the normal layers of the muscular walls separately in all cases if possible. I think all of us find the relaxation suture necessary, at least in large abdomens, and I usually prefer silkworm gut to any other suture, removed in ten or twelve days.

Dr. Marcy's paper may be disposed of promptly, as I do not wish to criticize it. He was the first man to point out the importance of restoring the obliquity of the inguinal canal, and he was then many years ahead of the times. No man living has pointed out the true anatomical relations as graphically as Dr. Marcy, and we are also indebted to him for kangaroo tendon as a valuable buried suture.

DR. A. H. FERGUSON, Chicago—The subject of inguinal hernia is a very interesting one, and it is the only portion of this discussion to which I will devote a few minutes. Whatever honor belongs to the radical cure of oblique inguinal hernia by the Bassini and Halsted methods is due primarily to Dr. Marcy, but I must say, however, that I am compelled to take variance with all these operative procedures in the vast majority of cases; in fact I characterize all these operations as shot-gun prescriptions because they do not take into consideration all of the etiological factors. It is true that the rotundity of the peritoneum is restored by tying off the sac, and that the inguinal canal is also restored, but what about the other structures These are only passive structures and the next in front of the internal ring and canal is the internal oblique muscle, which is the only active muscular protection that the internal ring has. Physiologically it is beautifully protected by this muscle as it runs across to the conjoined tendon from its origin at Poupart's ligament. The normal origin of the internal oblique at Poupart's ligament in the male is a little more than one-half of this ligament, while in the female it arises from two-thirds. This is no doubt one reason why oblique inguinal hernia is more frequent in the male than in the female. When there is a deficient origin of the internal oblique muscle at Poupart's ligament, the active protection of the internal ring is gone and there is an angle. Sometimes this deficiency extends to the anterior superior spine. In 95 per cent. of inguinal oblique herniæ there is a deficient origin of the internal oblique muscle at Poupart's ligament. When the intra-abdominal pressure exerts itself and distends the peritoneum and the internal ring, which is composed of the transversalis fascia, then the protecting muscle being absent the hernia protrusion meets with nothing more until it reaches the aponeurosis of the external oblique muscle in front of the inguinal canal. The point I wish to impress on you is that there is a new etiological factor at work in hernia which has not been recognized, namely, the deficient origin of the internal oblique at Poupart's ligament. I divide the radical cure into two classes: 1, the typical operation, which restores all the structures from within outward and leaves them the same as they are in the normal inguinal region, and 2, plastic operations which are necessary to strengthen specially weak points in the hernial region, caused by congenital defects or by pressure of hernial contents or a truss. No young man should be allowed to go on wearing a truss until his abdominal wall has thinned out.

DR. W. J. MAYO, Rochester, Minn.—I think the author of the first paper called our attention to an important point when he said that by putting these children in bed, carefully correcting their diet, and relieving them of their constipation and any urinary disturbance, a large percentage would be quickly cured. The paper by Dr. Johnson is also an important one. It is not necessary to add anything to what has been said by Dr. Marcy, but there are one or two practical points I would like to mention connected with the cure of hernia. I have no idea of discussing the Bassini operation, but the most important point about it is that he divides the scar. Instead of being brought together in a single line it is divided into two lines. In the Johnson operation the first line of scar tissue is protected by Poupart's ligament, and the outside line by the oblique layers of muscular tissue. This method can be carried to other parts of the body and you can divide the scar in a ventral hernia in the same manner. Umbilical hernia is one of the most difficult that we have to deal with and usually occurs in fleshy people. If you put them on their back and ask them to rise up, you can easily determine where the recti muscles are, which may be separated several inches. If you make the incision down to one side of the sac you can examine the inside and the contents, and cut off the omentum at the base. The operation can be done either laterally or transversely.

DR. A. J. OSCHNER, closing—Theoretically it is always bad to put children in bed when they can be treated without. If treatment by means of a truss is as effective as treatment in bed then the latter is wrong. If you put the child in bed in the inverted position, you give the mesentery an opportunity to shorten, and at the same time take care of the intra-abdominal pressure, which is due, as Dr. DeGarmo has said, to constipation. It is also, however, due to the pressure necessary to overcome the gaseous distention. As a matter of fact, by overcoming these difficulties, the children improve so enormously that in my experience weak, emaciated children, whom you would consider in good condition to contract almost any disease, will build up wonderfully. I have not seen one single child which did not improve enormously while in bed, and consequently the objections which would suggest themselves to any one are eliminated. I would like to ask the members to try this form of treatment, as I have been greatly pleased with it. It consists simply in keeping the hernia sac empty, and in keeping away the abnormal intra-abdominal pressure.

DR. H. O. MARCY, closing—We will all agree with Dr. Ochsner that children are benefited by rest in bed, and I think that they are benefited also by early operation. Why should we have institutions for the young intended to prevent these children entering life handicapped by hernia if it is not safely a preventable condition? As to ventral hernia, it seems to me that this is a simple thing to avoid. In the last 1500 laparotomies I have had but one hernia; of course I speak of aseptic laparotomies. If you prevent ventral hernia you will save much subsequent suffering. If the cases are restored cured, the way to do it is to build it back to its normal anatomy, and reconstruction of the abdominal wall in layers will do this. I think the problem of hernia is practically settled. There were a few fundamental principles mentioned in the paper which I did not read, owing to lack of time. A man should be a thorough master of the technic of hernia and the operation should not be confined to a few men. We must remember that 3,000,000 people in this country wear trusses. The large ma-

jority of this great truss-bearing army are entitled to be cured.

DR. M. M. JOHNSON, closing—As regards restoring the normal layers if possible, I would say that in a large number of ventral herniæ following appendectomies there has been a long process of suppuration and drainage, often followed by a loss of tissue and atrophy, to the extent that all the lines of the normal layers are obliterated. It is in this class of cases that you must unite the parts en masse, as stated in my paper.

HYDRENCEPHALOCELE.*

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The prognosis of hydrencephalocele, formerly so extremely unfavorable, has become more promising under the auspices of asepsis, as well as under those of the Roentgen rays, which have but recently added a further element of better knowledge. As an illustration the following cases may serve:

CASE 1.—A boy of 5 weeks of age well nourished and otherwise normal, shows a spherical, non-pulsating tumor of the size of an orange, projecting from the nasofrontal region and sinking downward to the alæ nasi. (Fig. 1.) At birth the tumor was a trifle smaller. The family history shows nothing abnormal. The father is a German laborer, the mother was born in New York City. Both parents are anemic. The mother was a multipara—four previous children—and the confinement was normal. In connection with the question of injuries being etiological factors in the defects of development of early intrauterine life, it is interesting to note, that the mother fell from the fourth story of her residence eight months before confinement, escaping with a fracture of three ribs and of the olecranon and a contusion of the knee. Pleuritis followed the thoracic injury, but recovery took place three weeks afterward.

The walls of the tumor were thin and the integument appeared normal. Contractions of the tumor were observed, especially while the child was crying. During sleep the tumor appeared somewhat smaller. There was exquisite fluctuation and the contents could almost entirely be pressed within the skull, which procedure did not cause any reaction. Neither pulsation of the brain could be detected, nor could the border of the cranial opening be distinctly felt.

In view of these facts, especially of my inability to palpate so solid a mass with certainty, I diagnosticated meningocele, and thought of aspiration followed by the injection of a small quantity of iodoform-glycerin.

The Roentgen rays, however, modified my views. A skiagram (Fig. 2) showed behind the light shade, representing the fluid, a dark one, which had to be interpreted as a solid mass confined to the area of the large triangular bony opening. That this was cerebral substance could be verified by the subsequent operation.

The skiagram also showed that the nasal bones were shifted downward so that an interspace of the width of a man's thumb was left between it and the frontal bone. Now I dropped the idea of the treatment by injection and proceeded to excision, which was done without anesthesia. After constriction at the base of the tumor for the purpose of ascertaining whether cutting off the circulation and pressing upon the contents would produce any reaction, a prophylactic silk-suture was conducted around the whole circumference of the tumor at its base, in order to be able to control any excessive hemorrhage by quickly pulling the suture-ends together. Now, an elliptic flap was dissected from the center of the tumor and the cavity opened laterally. After about one tablespoonful of normal cerebral fluid had escaped, further exposure of the sac revealed its lining, consisting of dura mater, partially protecting degenerated cerebral substance. Near the base, according to the darker shadow of the skiagraph, cerebral substance, covered by dark-red, velvety, succulent and easily-bleeding tissue, was protruded. After severing the protruding portion from its lateral connections, which were thinly spread over the walls, it was possible to reduce it into the cranial cavity. Two-thirds of the sac was removed and the remaining stump was freed from the frontal bone, including periosteum, until apposition without tension could be obtained. The edges were then united with thin formalin-catgut and supported by another row, consisting of the overlapping soft tissues. Finally the skin edges were united with stout silk. Although the loss of blood was scant, the infant appeared very anemic after the operation and refused nursing until two hours afterward. No stimulants were administered. There was no reaction, and to-day, ten days after the operation, the wound is perfectly healed and child appears normal in every respect.

Fig. 1.—Nasofrontal hydrencephalocele in a boy of five weeks of age.

A skiagraph taken one week after the operation shows that the bony canal became somewhat smaller.

Another skiagraph (Fig. 3) taken six months later showed considerable narrowing of the bony canal, the nasal bones also having approached the os frontis in the meanwhile. The child has developed well and is normal in every respect. (December, 1900.)

CASE 2.—A boy, 7 weeks of age, whose family history reveals nothing abnormal. The parents immigrated from Polish-Russia several years ago. The mother is a multipara and is, like her husband, fairly well nourished.

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This child, otherwise well developed, shows an ovoid tumor, the size of which exceeds that of his head, and projects from the foramen magnum. The walls of the tumor, which, if not held, sink down alongside the spinal column, are moderately thick at the center and very thick and hairy at the base, while at the translucent tip they are very thin. The translucent area, which contained cerebral fluid, fluctuates, while the remaining portion is solid. The fluid can not be pressed within the skull. The skull appears microcephalic, the sutures thick and the fontanelles small.

The tumor has slowly enlarged since birth. The child has nursed well. It can not cry, but moans once in a while in a voice which has an animal timbre. It never cried like normal children. During moaning slight pulsation of the tumor could be observed. There was always considerable restlessness.

Ophthalmoscopic examination was thus very difficult, but it could be ascertained that the child was blind.

Four different efforts to get a skiagraph were made, but the restlessness of the child also prevented a fair reproduction. Still the fact that there was a pedicle, of moderate size, apparently not in entire connection with the brain, could be registered.

Fig. 2.—Hydrencephalocele—skiagram of Fig. 1—showing hiatus between nasal and frontal bone and fluid and solid portions.

Aspiration and injection of iodoform-glycerin were advised as a first therapeutic step, but in the meanwhile kind neighbors suggested to the parents that they could earn a fortune by exhibiting the "freak" at a dime museum. So the child was freely handled until two weeks later alarming symptoms set in, the child refusing nursing and going into convulsions several times a day. I now saw the child again. The translucent portion of the tumor appeared congested. The temperature was 102.4 per rectum, and pulse and respiration were also higher than normal. The typical danger of all hydrencephaloceles, spontaneous rupture of the sac—which meant death—appeared to be imminent. Considering the absolutely fatal prognosis of hydrencephalocele in the case of non-interference, I advised immediate excision. After ascertaining, by a rubber tie, that constriction of the base of the tumor had no dangerous effect, I proceeded to the ablation of the tumor. When the sac was first opened at the tip about two ounces of a slightly yellowish, opaque fluid escaped. After further dividing the integument, subcutaneous tissue, fat, interspersed muscular tissue and dura, the solid contents, which appeared like normal brain-substance, presented themselves. They contained the distended posterior cornua of the lateral ventricles and the thalamus opticus covered by normal pia. The basis of the tumor was in connection with the brain by a pedicle of moderate circumference.

After ablation the basal edges of the wound were inverted and united by formalin-catgut. The skin-flaps were secured by stout silk and protected with iodoform-gauze-collodion dressing.

Although there was no loss of blood, constriction being upheld until apposition, the child presented the symptoms of shock until an hour after operation, the body remaining motionless, the respiration slow and irregular and the face appearing very pale. Nursing was refused until five hours later. On the following day the child's condition was good, the temperature and respiration being normal and the pulse only slightly accelerated.

On the third day the temperature was 104.2, respiration irregular and the feeble pulse could not be counted. Stimulants had no effect. Exitus occurred on the fourth day, apparently from purulent meningitis. The autopsy was declined by the orthodox parents.

Fig. 3.—Skiagram of Case 1, taken six months after removal of hydrencephalocele, showing considerable narrowing of the bony canal—the nasal bones having approached the os frontis.

In view of the pedunculated form of the tumor an operation at an earlier stage would probably have saved the child's life. Still, considering the microcephaloid condition of the head, the desirability of such a result could be questioned.

In connection with these histories, I may also refer to a case of encephalocele concerning a poorly-nourished boy of 3 months of age, suffering from complicated hare-lip and cleft palate at the same time; he gives a good family history. The father is a German laborer. The mother, a multipara, was born in New York City. At birth, a globular, pulsating tumor was detected, which had moderately increased in size since. With a broad base it springs from the contracted skull laterally from the superior angle of the occiput. The child had slight attacks of spasms once in a while.

The treatment was very simple. It consisted in exerting pressure by a large iodoform-gauze-collodion dressing, which had the slight disadvantage only, that after long employment dermatitis set in. Under this pressure treatment, the tumor diminished gradually in

size and disappeared entirely in the course of a year. In the meanwhile the hare-lip, as well as the cleft palate, were also successfully operated on. Now the child is 2 years old and enjoys perfect health.

SYMMETRICAL DEVELOPMENT,

OR DOES OUR PRESENT SCHOOL SYSTEM DEVELOP THE HIGHEST POWERS OF THE PUPIL?*

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"Man is the noblest work of God," the acme of creative energy in the world, and the grandest product of cycles of evolutionary progress. While all this is true, still, owing to his exceedingly complex organization and unstable equilibrium, he is very liable to derangements which, unless promptly corrected, rapidly lead to deterioration and decay. This tendency has made the subject of evolving, or developing man's highest powers and noblest characteristics a theme which has received the earnest attention of the greatest philosophers, educators and philanthropists the world has produced since the earliest dawn of civilization.

The kind of education that will best equip the individual for the most complete living and enable him to do the most good in the world has always been a momentous question, but as mind gains a greater ascendancy over matter, and the forces of nature are called into requisition to do the work of the world, properly developed bodies, well-trained minds, and fully-rounded moral natures are becoming of increasingly greater importance to secure a true civilization.

The spirit of greed and rapacity which "would wade through slaughter to a throne, and shut the gates of mercy on mankind"; which would erect an oligarchy for the benefit of the few, and reduce the great body of the people to veritable slaves, can only be checked and higher ideals substituted, by a better and more effective education for the masses of the people.

In order to obtain a clear conception of man's organization and the possibilities of his powers, it is necessary to take a comprehensive view of his nature, and know something of the physical, mental and moral potentialities impressed on him through ages of evolutionary progress. Unless we enter on the study of the best methods of developing man's highest and noblest powers with a broad and comprehensive view, we are almost certain to become ardent advocates of some partial and restricted system which trains and cultivates certain of his powers to the neglect of others. If our minds are carried away with the importance of physical training we are liable to overlook or neglect the mental and moral attributes of his nature, in which case we would probably produce excellent specimens of ancient gladiators, modern prize-fighters, or conscienceless bullies; if we are imbued with the transcendent importance of the mental powers, and devote our whole attention to their cultivation, we may produce prodigies of youthful precocity, which, owing to undue development or shattered physical powers, or perverted moral natures, land in premature graves, drag through life miserable, suffering wrecks or become harpies and fatten on society, or, if not so successful, criminals and fill our jails and penitentiaries; or, lastly, if our whole attention is devoted to moral training, we will probably have as a result a lot of physical nonentities and mental incompetents, in short, useless or worse than useless fanatics.

With the dangers of partial or one-sided development clearly before our minds, I desire in this paper to emphasize the importance of the simultaneous, symmetrical development of all the powers, physical, intellectual and moral.

In order to obtain a secure foundation for so important a work, it is necessary that parents, and especially teachers, should have at least a clear outline knowledge of man's phylogenetic development. Every one should know that "a child is born with organs, aptitudes, powers, possibilities, desires, impulses, and with instincts, but is without knowledge, habits or moral character;" also that the child instead of being a "little man" with the same thoughts, feelings, inclinations, capacities and powers only on a smaller scale than a man, is in truth an altogether different being, and may be aptly characterized in his various stages of development as an epitome of the development of the race. He passes through the successive stages of savagery, barbarism and semi-civilization before attaining to the full civilization in which we live. During this progress the spectral forms of his dead ancestors surround him on all sides, and the mighty mental accumulations and beliefs of a long-forgotten past impress on him the various stages of credulity, inquiry, faith and full-blown reason through which these ancestors have passed.

They should know that in both organization and function there are great differences between the adult and the child, and their nurture and training should be different, and made to conform to their organic and functional capacities.

The glands, heart, lungs and muscular and osseous systems of the child possess a high degree of organic and functional perfection, and this would logically seem to indicate that the proper exercise and development of these various organs and systems is the rational and proper occupation of the child during childhood and early youth. In support of this inference it may be said that in the savage and barbarous stages of race development, to which the child corresponds, these organs and functions are developed to a high degree of perfection.

Such things as weak, flabby muscles, flat chests, failing hearts and impaired digestive organs were unknown, because their existence would have meant extinction to their possessors. The muscular, osseous and respiratory systems were developed to a high degree of perfection, which was not attained by disuse and confinement in illy-ventilated rooms for a considerable part of the day, and the whole of the night, but by a careful and systematic exercise of the parts undergoing development.

But while the physical organization was systematically developed and had attained a high degree of perfection, and the special senses, especially the sight and hearing, were carefully trained from the earliest childhood until they became phenomenally acute among savage races, the intellectual faculties in many particulars remained in a rudimentary state. The powers of continuous mental application, abstract reasoning and broad generalization were unknown in the savage, and were only acquired by the race through the slow gradual process of evolution.

While, as above indicated, the organic development and functional capacity of the heart, lungs and glandular organs, and the muscular and osseous systems of the child at birth have reached a high degree of perfection,

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on the other hand, his nervous system is in a very immature and undeveloped state, and does not reach full maturity until about the age of 33 years. The brain of the young child as compared with that of the adult, contains a larger percentage of water, is softer, more easily irritated, and is much sooner fatigued on mental exertion; but on the contrary, the perceptive faculties, whose development depends on the training of the special senses, are keen and alert, and attain a high degree of perfection if given an opportunity in childhood to develop in accordance with the laws impressed by nature upon the race throughout the ages. With these fundamental principles clearly in mind, let us now see whether our courses of study and methods of instruction are based on a correct foundation and are in harmony with the evolving powers of the child. Right here I desire to say that any criticisms I may make on existing conditions or methods are not made in a spirit of fault-finding, or for the purpose of casting reflections on our great army of teachers, who are, as a rule, faithful, conscientious and sincere workers, often laboring under great difficulties and struggling against unnecessary obstacles, but solely for the purpose of calling attention to some evils which the best interests of our seventeen millions of pupils demand should be corrected. Parenthetically, too, I want to say that hereditary defects, improper home-training, dietetic errors, late hours, parties and all that kind of dissipation are not laid at the door of the schools, but are matters which should be corrected by the parents.

With the way thus cleared, and surrounded by a group of earnest, trusting 5-year-old faces, let us follow them to the kindergarten and see what should be, and what is being done for them. Here, if they are so fortunate as to have a teacher imbued with the true spirit of Froebel's teachings, they pass a happy time, and receive much benefit. Their books are plants, flowers, trees, fruits, birds, insects and the various objects, animate and inanimate, of the external world by which they are surrounded. The everlasting hills, rising in majesty and grandeur around them; the soughing of the wind among the trees, the murmur of the brooks, the glorious sunsets, the autumn forest with all its gorgeous hues and kaleidoscopic changes, in short, the almost infinite variety of objects and the innumerable beauties of nature can be made most impressive sermons by the true kindergarten teacher, sermons that will sink deep down into the soul of the child, and leave an impression on its body, its mind and its character which the storms and the vicissitudes of life will never obliterate. But, alas! Such teachers as we have in mind are like angel's visits, rare, indeed, and come like a ray of hope from the great beyond.

In the great majority of instances, even the life of the kindergarten is smothered by the blighting curse of formalism and routine, and instead of being a blessing it becomes a curse, and through ignorance or disregard of the most rudimentary physiological laws, lays the foundation of physical defect or disease. But, you may ask: On what grounds do you make such statements? In the first place, as Maudsley has very beautifully shown, it requires frequent repetition and long-continuance of a sensory impression to make a well-established pathway to and from the brain, over which such impressions may be conveyed with the greatest ease and accuracy. Every one knows how exceedingly difficult it is to become a skilled pianist, or to attain proficiency in any work requiring delicate, rapid and finely coordinated muscular movements. Long and careful practice is devoted to securing facility of the coarser muscular movements, and when this has been accomplished, the finer and more delicate movements are gradually acquired. In kindergarten work this fundamental physiological law is often ignored or transgressed. The children, instead of first having been carefully trained in the coarser muscular movements, which are brought into play in walking, running, playing, skating, horseback riding, molding in clay, building objects of various kinds with large blocks, gathering flowers or geological specimens, or the many other ways that naturally suggest themselves, are put to sewing and various occupations that not only require delicate and accurate coordination of the muscles brought into play, but also throw a great strain upon the eyes and are responsible for much of the myopia and other defects of vision which are becoming so prevalent in our schools.

The second fundamental physiologic principle to which I desire to direct attention—and I want to insist upon this, because it applies not only to the kindergarten and primary grades, but to all grades of our school system—is, that in the child and youth the association fibers which connect or unite the various brain-centers are in an undeveloped state. Owing to this condition the various brain-centers are largely isolated, and must depend on their own nervous energy in the performance of their special functions. This explains why young children are unable to concentrate their attention on one subject for any great length of time; why they tire so easily; why they become restless, and why they should have frequent changes of work as well as periods of rest and intermission, to permit the tired brain-centers to regain their strength and tone. As the child grows older, these association fibers gradually develop, and distant brain-centers are connected and can work together harmoniously and assist and strengthen each other.

In order, however, that this cerebral development may be the most symmetrical and perfect, it is necessary that the motor brain-centers be developed simultaneously with the higher intellectual centers.

To secure this result requires pure, rich, vitalized blood, and a proper exercise of the functions on which the development of the centers depends, or in other words, to have well-developed motor-centers the pupil must have plenty of plain, nourishing food, pure air and outdoor exercise. When these conditions are complied with the intellectual centers rapidly store up power and at the proper time produce most wonderful results, as has been so often illustrated in the history of our country and that of other nations, and explains why Franklin, Webster, Lincoln and hosts of others, with meagre educational facilities, became intellectual giants and shed glory and luster over our nation. It also explains why our old-fashioned country schools, with all their drawbacks, crudities and imperfections, but free from the high-pressure cramming, artificial and, I might say, diluting methods of our graded schools, brought their pupils closer to the great mother nature, and permitting their brains to develop slowly and acquire power, have accomplished so much good.

The old motto *mens sana in corpore sano* is just as true as when written, and should appeal to us with even greater force than to those for whom the words were penned centuries ago. While this truth is beginning to be appreciated by educators, and much attention is given to athletics and physical training in some of the higher institutions of learning, in the great majority of our town and city graded schools proper physical cul-

ture and bodily development are either inadequately cared for or entirely ignored.

I desire to call attention to the following errors which I believe are common in a great majority of our schools:

1. During the early, plastic years of childhood young children are given too many studies.
2. The daily sessions are too long.
3. Recitations are generally too long.
4. Intermissions or periods of relaxation are not frequent enough, and the children do not have enough exercise in the open air, with free spontaneous, unrestrained play.
5. Pupils are frequently deprived of the privilege of attending to the calls of nature.
6. The system of examinations generally followed is attended by many evil results.
7. Many teachers resort to cruel, dangerous and harsh punishments, instead of whipping when corporal punishment is necessary.

I desire to say that these conclusions do not represent my own unsupported opinion, but are entertained by many of the most prominent educators and physicians in our own country, and, indeed, I might say, the world.

First, let us briefly consider the school buildings, their surroundings and the teachers. While many of our school buildings are models of beauty, comfort, convenience, and fulfil hygienic requirements admirably, on the other hand, in many places, especially in the large cities, accommodations are entirely inadequate, and thousands of children can not be admitted to them for lack of room; many of the rooms are poorly ventilated and dark, it being necessary to keep the gas burning in some the whole day, which renders them unfit for school purposes. There is much over-crowding, many teachers having from 75 to 150 pupils.[1] In this connection I desire to call attention to the timely and exceedingly valuable suggestion of Dr. J. C. Culbertson, a member of the Cincinnati school board. Dr. Culbertson has made a careful study of the health conditions in the schools of his own city, and strongly recommends that when it is necessary for cities which have facilities for rapid transit to build new school houses, they should be built out in the country, where large play-grounds, pure air, sunlight and ideal health conditions can be secured. I consider this a most excellent suggestion, and if carried into effect I believe it would rapidly improve the health of city pupils.

We are justly proud of many of our teachers, but while this is true, the fact must be admitted that there is a decided lack of professional *esprit du corps,* and a large percentage have never been properly trained for their work; only about 15 per cent. have taken a course of professional training in normal schools,[1] and many lack that thoroughness of education necessary to make them first-class teachers. A large number do not expect to make teaching their life-work, but merely a stepping-stone to some other profession or calling. Thus it will be seen that while occupying a position of the utmost importance and most far-reaching consequences, the majority of our teachers lack one or all of the requisites for successful teaching, namely, enthusiasm and natural ability for the work, thorough education and careful professional training. The result of this is that in many schools the work, instead of being inspired and vitalized by a love for truth and a desire to penetrate and understand the secrets and laws of nature, is dull and mechanical and consists principally in routine and cramming for examinations, which, as you all know, has little real educative value.

Children Are Given Too Many Studies.—The great increase in recent years of the number of subjects included in our common and high school courses compels pupils to take too many studies at the same time, thereby creating a tendency to superficial and imperfect work, and the pernicious habit of leaving a subject before it is thoroughly understood. It is very seriously doubted by many of our best educators whether the breadth of culture thus gained is not more than counterbalanced by the lack of thoroughness and mental power which were acquired by students of fifty years ago. No one who has seen the pale, delicate children groaning under a load of books almost too great for their strength can doubt that the pushing, crowding and high-pressure to which they are subjected from the time they enter until they leave school have a very deleterious influence on healthy physical development, and are responsible for a large part of the dyspepsia, nervous irritation and mental irritability which, unfortunately, have become such prominent characteristics of our people. Young children are not only given too many formal studies, but some studies for which in mental development they are entirely unprepared and can not comprehend. As a notable example of this I desire to call attention to the everlasting number-work and arithmetic drill which appear to have become a mania with the majority of teachers in our schools to-day. From the time the unfortunate children enter the first primary grade through the eight long years, until they emerge from the grammar course they are subjected to a continual grind in number-work, problems and examinations. Morning, noon and night these are a veritable "old man of the sea" to them, hanging like a pall over their hours of leisure, and even invading their dreams; they become not only a menace to the health and happiness of the children, making them cross, nervous and irritable, but also a nuisance to their parents, who can not enjoy a quiet half-hour because a puzzled child can not solve a long list of problems far beyond its comprehension, and appeals for help. But, after all, what results are attained by this work, worry and grind? I believe I am justified in saying that they are nearly always inadequate and often a dismal failure, and that any 11 or 12-year-old pupil who had never looked into a written arithmetic, but who had been carefully drilled in mental arithmetic, can do better work and obtain a clearer comprehension and more thorough grasp of the subject in three or four years than the struggling child obtains by its eight years of arduous and detested toil.

If it is true, as claimed by the eminent psychologist, Prof. G. T. W. Patrick, of the University of Iowa, that the child does not reach the "arithmetic age" until about the age of 10 or 11 years, we have good grounds for recommending that this useless arithmetic grind, this brain-irritating and mind-paralyzing exercise be banished from the schools, and that the time now worse than wasted be devoted to acquiring a knowledge of the fundamental facts of botany, geology, zoology and other subjects that the children can understand and enjoy. If such a course were adopted the children could be brought into closer contact with the beauties and wonders of nature, and in an informal way, receive a clear insight into her mysteries. By putting much of the primary work on the basis of pleasant diversion, the pupils would not only learn more about the various subjects thus taught than if presented in a formal way, but they would, in addition, acquire a physical strength and moral uplift which would enable them to overcome easily the otherwise serious obstacles of their formal

work. The barren rules of grammar would crystallize into the charming beauties of applied language, and hitherto dry and barren subjects would reveal unappreciated beauties.

The Daily Sessions for Young Children Are Too Long.—It was a revelation to many people, and especially to the educators, that when manual training was introduced into some of our city schools those pupils who devoted a considerable part of each day to this kind of work not only made as good progress in their regular studies, but even excelled the pupils who devoted the whole daily session to study, while at the same time they enjoyed better health, were more contented and happier.

The same thing is shown in the schools where, owing to over-crowding, some of the pupils can only attend school half of the daily session. In these cases it has been found that the half-day pupils accomplished as much or more than those who were in school all day. Indeed, as Dr. J. C. Culbertson[2] well says: "Manual training, and so-called Sloyd work, should be made part of the regular course of study in all schools." "All boys and girls should be educated in the use of their hands, so that these members of the body can and will co-ordinate with brain functions." "This means everything through life, including self-sustentation, self-reliance and individual independence."

Time will not permit me to enlarge on the many advantages arising from manual training; to point out how the training of the muscles develops the controlling motor-centers of the brain and produces a broader and richer sensory content, a larger and more accurate knowledge of the world and a deeper insight into the forces and laws of nature. This training and co-ordination of the muscles develops the motor-centers of the brain, develops the association fibers which bind together and strengthen the three billion nerve-cells which go to make up the nervous system, and at the same time, by removing irritation and giving nature a chance, favors the storing and up-building of power in the higher brain centers which in later years, dominating and supported by a magnificent physical organization, assume a commanding position both in the world of thought and of action, and produce most wonderful results, while the poor, hollow-eyed little pedant, the youthful prodigy, with his stimulated, irritated and weakened brain and mind is relegated to a life of mediocrity or is consigned to the grave or an asylum.

Recitations Are Generally Too Long.—The power of concentrating the mind is very limited in the young child. In a very few minutes his interest and attention begin to flag, and if the attempt is made to compel him to continue the work after this point is reached he becomes fatigued, nervous and restless, and such attempts are not only barren of good results, but are positively injurious because in the first place, impressions made on a tired brain do not last, and the attempt to fight against nature is without any permanent good result, and secondly, because such work irritates and weakens the unstable brain. With young children during the first five or so minutes, when their faces glow with enthusiasm and they give close attention to the work in hand, good is being accomplished, but as soon as it requires an effort of the will to follow the work, and they become tired, they are being injured, and the recitation should stop at once, even if not more than one-half the routine time has been occupied. Change their work or turn them out to play and you will accomplish much better results than if you attempt to impose undue burdens on the protesting brain and convert a soul-inspiring work into a detested drudgery.

Intermissions or Periods of Relaxation Are Not Frequent Enough, and They Do Not Have Enough Exercise in the Open Air, With Free, Spontaneous, Unrestrained Play.—Play is a God-given impulse implanted in the child for its protection and development, and the more thoroughly this subject is studied the more strongly does the truth impress itself on rational thinkers that nature's ways are far superior to man's ways and should be as closely followed as possible.

Who does not sympathize with the little boys and girls who prefer to go to the fields, woods and hills to gather flowers, watch the birds and squirrels, collect insects, chase butterflies and moths or examine the rocks on a bright, warm spring day, rather than sit in a musty school-room? I tell you, my friends, the children are right. The voice of Nature is crying within them for physical, mental and moral pabulum, and we are giving them the stones of a barren routine, or an indigestible man-made dietary.

There is a disposition on the part of some teachers to do away with the old-fashioned, open-air recess. They advocate in its place calisthenics, or some kind of formal exercise. In the whole range of educational subjects there is no question fraught with more important consequences to the children than that of proper sanitary surroundings, and ample provision for healthful out-door exercise. As previously indicated, the brain of the child is unstable and easily irritated. Nerve force rapidly accumulates in the motor centers, and unless frequent opportunities be given for its discharge in muscular movements, the attempts to inhibit these movements by will power will not only set up irritation of the brain, make the child peevish and unamiable, injure its health and interfere with its proper physical development, but will at the same time weaken the mind and defeat the very object for which long sessions are intended, namely, the accomplishment of the largest amount of work in a given time.

Oxygen is necessary to produce nerve force,[3] to stimulate the respiration and circulation of the blood, to develop the muscular system and to destroy the poisons continually accumulating in the system, and since no room with from 40 to 60 pupils can be occupied much over an hour and the air be fit to breathe without dangerous drafts being created, pupils should have a 15-minute, open-air, out-door recess in the middle of each long session. During the recess the windows should be thrown open and the rooms thoroughly ventilated, the foul exhalations eliminated and the air vitalized. This out-door exercise is best for the child because it removes him from the monotony, formalism and routine of the schoolroom and enables him, yes, compels him, to inhale full draughts of nature's life-giving element, pure air, to free his system from accumulated poisons and spontaneously to develop his powers and adjust himself to his environment.

A properly conducted recess not only increases the sympathy and fraternal feeling between pupils, increases their physical strength and enlarges their intellectual and moral horizons, but it also draws them closer to mother nature, the source from which to derive true power and inspiration.

While I do not want to be understood as opposing calisthenics and gymnastic exercises, because properly conducted they are very useful adjuncts and give gracefulness, vigor, bodily symmetry and pleasure, I do want to protest against the custom of supplanting the out-

door recess by these exercises, which in recent years has crept into some of our schools.

Notwithstanding the fact that the great majority of our educators and nearly all our most eminent physicians strongly endorse out-door recesses with free, unrestrained, spontaneous play, still enough teachers supplant them by calisthenics to do a great deal of harm.

During spontaneous play the motor nerve centers discharge their stored-up nerve force involuntarily, spontaneously and without effort on the part of the higher brain centers, while on the other hand, calisthenics and gymnastic exercises require considerable effort of the will in directing their various movements, so that at their close the higher brain centers, instead of being rested and strengthened, are more fatigued than at their beginning. Such exercises soon become distasteful and a drudgery, and as the distinguished author and educator, Joseph E. Baldwin, very tersely says: "Drudgery hurts, and does not help. Work and then play is the Divine plan. We may easily quadruple the value of our schools by studying to keep our pupils fresh. Strong men find recreation a necessity; how much more must immature pupils play as well as work, and thus grow. He who helps to lead the school-world to play wisely deserves to be crowned as a benefactor." As to the frequency of recesses, he speaks as follows: "The hygienic and educative benefits of the hourly recess are incalculable; young children soon become fatigued, and so we make their periods of work very brief. The periods of work are lengthened as the pupil advances. The fatigue limit is a great practical study. Much may be done to keep pupils fresh by having easy work follow difficult work. Change rests, but periods of absolute freedom are indispensable. In schools of the future it is believed a recess of ten minutes will be given at the end of each hour." In contrasting romping and calisthenics, the eminent surgeon, Frank H. Hamilton, says: "Calisthenics may be very genteel, and romping very ungenteel, but one is the shadow, the other the substance of healthy exercise. Girls need health as much, nay, more than boys. They can obtain it as boys do, by running, tumbling, by all sorts of innocent vagrancy. At least once a day girls should have their halters taken off, the bars let down and be turned loose like young colts."[4]

In the middle of the day the pupils should have a full hour or more in which to eat a warm lunch, and give the digestive process a chance to be properly begun. Giving pupils a short intermission at noon in which to eat a cold lunch, composed principally of pickles, rich cake or pie, which are the only things their perverted appetites crave, is the fertile source of many digestive, assimilative and developmental troubles which curse their subsequent lives.

Children Should Be Given Free and Ample Opportunity to Attend to the Calls of Nature.—To most persons it may seem that this admonition is entirely superfluous, and that the dictates of humanity and common sense would make this privilege universal. From my own personal experience as a member of a school board, as a practicing physician and from quite an extensive correspondence with teachers, educators and physicians, I am sorry to say that the practice of denying pupils this privilege is more prevalent than I would have believed it to be without a thorough investigation. Indeed, I am satisfied that even superintendents and principals of schools do not fully appreciate how frequently teachers err in this matter. This can probably be explained in part at least by the fact that it is a delicate subject about which parents do not like to make complaint and which does not receive the attention and discussion in teachers' meetings that its importance deserves.

Whatever may be the causes of the practice, it exists to a greater or less extent, and exerts a most baneful influence both morally and physically on the pupils subjected to it.

As every one should know, the disregard of, or failure to attend to, the calls of nature promptly is the source of many physical ills, and may be the cause of life-long disease and misery. In the first place, it may produce chronic constipation, which, as every physician knows, is a regular Pandora's box of evils, and may lead to the gravest consequences. The toxins produced by the retained fecal matters are absorbed into the circulation; they penetrate to the most remote cells of the body; they poison the blood and the brain, lower the vitality of the body and weaken the mind. This poisoning causes headache, neuralgias, lassitude and malaise, which make work a drudgery and life a burden. It is even asserted by Dana[4] "that organic changes in the central nervous system are doubtless due to the absorption of toxic substances produced by microbic processes in the alimentary canal." By clogging the system with effete matters digestion is impaired, nutrition rendered imperfect and growth and development retarded.

The strain on the bladder caused by efforts at retention may lead to paresis, incontinence of urine and chronic inflammatory conditions of the bladder, and the irritation and congestion thus produced may cause irritation of the sexual organs and lead to secret vices, thereby wrecking the child, not only physically, but morally as well.

Too Much Home Study Outside of School Hours Is Required, Especially of Young Children and Girls at Puberty.—This question as to the amount of home study that pupils should do outside of school hours is a very important one, and one about which there is a wide divergence of opinion. There can be no doubt that if children could have plenty of out-door exercise in pure air, surrounded by proper moral safeguards, and the time now devoted to entertainments, parties and other social dissipations were largely spent in sleep or devoted to healthful recreations, or a judiciously selected course of general reading, they would enjoy much better health and be better off in every way without any formal home study. Such conditions, however, are difficult to secure, and when it comes to a choice between allowing children to run the streets and be brought in contact with the demoralizing influences which they must meet with there, I think they had better have at least enough home work to keep them away from evil associations.

Whether home study will be beneficial or hurtful to a child depends much on the surrounding conditions, and the motives or incentives that prompt it. If done through enthusiasm, or a love of truth for the truth's sake, the results will likely be beneficial; if, on the other hand, the child is compelled to study by the slave-driver's lash or threats of failure and disgrace, the effects will in all probability be injurious.

Unfortunately, under our cramming, high-pressure method of education, with its frequent examinations and grand-stand plays for public show and approval, truth is lost sight of and the children are spurred on and incited to cram, memorize and fill themselves up for examinations and public exhibitions, regardless of the permanent effects of such a course. This sort of work keeps the child in a constant state of worry, anxiety and excitement; the brain is irritated, the vitality lowered,

the mind weakened and the importance of truth and honesty lost sight of. Under such a system even the brightest and best pupils will lie awake nights and worry over their grades, their examinations and their promotions, when never a thought or care on such matters should disturb them. Nor is this evil confined to the higher grades of the schools, but applies to many pupils in the primary grades.

The period of puberty is one of rapid development and growth, and makes great demands on the strength and vitality of the child, who, as a consequence, should be very carefully protected against mental worry, overstimulation, undue excitement or anything that will divert the vital forces from the great work which they have to perform.

Dr. Miller[5] very clearly depicts the condition of the child as follows: "The child fatigues much more readily, that is, his organism is much more quickly depleted and poisoned during the period of most rapid growth. The average boy has the most rapid growth between the ages of 14 and 16." In these two years he increases in weight by as much as he did during the entire six years preceding the age of 14. At this period of most rapid growth, the period of pubescence, the brain loses considerable weight, because of the fact that the usual blood-supply is lessened by a portion being withdrawn to nourish the viscera and other organs undergoing revolutional changes during this period. While the weight of the brain is only one forty-fifth of the weight of the body, it requires one-eighth of all the blood to nourish it. At no time in his whole school career is the boy so deserving of sympathy as at the time of most rapid growth. In all learning, two features are involved: proper presentation of material by the teacher, and proper attitude of the mind on the part of the pupil. Seldom, if ever, can the latter condition be supplied by the boy or girl in the midst of the physical and mental revolutions and evolutions of pubescence. The great curse of the age is the demand for rapid education. Parents and teachers crowd the children through a long year's work. Health is sacrificed for promotion. What is learned while the child is fatigued is soon lost, the mind's force being equally dissipated. Vital force is required faster than it is generated. The work of to-day is done on to-morrow's credit, and the system of a child is wholly at a loss to protect itself against disease and accident."

While the above is true of the boy, it applies with still greater force to the girl, on whose system the physiologic processes of puberty make greater demands than they do of the boy, and in addition to performing the same work as her brother in school, her parents are not only ambitious that she shall take high rank in the regular studies, but also that she shall acquire the accomplishments, such as music and painting, at an early age. Is it any wonder then that under this high pressure and stimulation the girl, robbed of rest, sleep and exercise, fails to develop into perfect womanhood. The nervous force so necessary at puberty for the establishment of the menstrual function is wasted on what may be considered trifles compared with perfect health, and the poor sufferer adds another to the great army of neurasthenics and sexual incompetents which furnishes material for the neurologists and gynecologists. Every physician who has given any thought or attention to the subject can doubtless recall many cases of broken health, unhappy homes and wrecked lives due to over-work and lack of exercise while in school.

Examinations.—The question whether the present methods of conducting examinations do more harm than good is very important and deserves careful consideration. There can be no doubt that where pupils are subjected to an everlasting grind of monthly examinations, term-examinations and annual examinations, and are continually being reminded that if they do not do this or accomplish that they will fail to pass and not receive their coveted promotions, great injury is done. I believe that when pupils are subjected to such a system, and in addition have the misfortune to be under teachers who, failing to realize or appreciate their true needs, give them puzzling problems or work that will mystify them, or is too difficult for them to perform, the examination becomes a menace rather than a help to the pupils. They are worried, annoyed and kept in a constant state of mental excitement from the time they enter the primary department of the public schools until the doors of the university close upon them.

Insufficient or no time is given for original observation and investigations, for that calm deliberation, serious reflection and earnest thought so necessary to make thorough students, ripe scholars, good citizens and the best type of ladies and gentlemen. These things are sacrificed in order to give place to facts and details which will make a brilliant show before the public, that will convert the pupils into smoothly working machines which turn out elaborate and highly ornate work to dazzle the dear people and impress them with the wonderful things the educators are doing.

This system of substituting names and shadows for things and realities, especially when conjoined with the pernicious practice of awarding prizes, not only impairs or ruins the health of the pupils, but has a very degrading effect upon them from a moral standpoint; because, instead of imbuing them with a love of truth for the truth's sake and impressing them with the fact that truth, honesty and justice are the grandest possessions in the world, a high grade or class standing is made the *summum bonum*, often regardless of the manner in which it is obtained.

Any teacher, by a careful system of grading recitations and a systematic preservation and inspection of the work done by the pupils, together with a general review of the subject-matter gone over, say three times during the school year, can arrive at a much fairer and better knowledge of the capability and progress of the pupils than can be obtained by continual examinations.

Moral Training.—During the plastic years of childhood and youth more attention should be given to implanting correct moral and ethical principles; because it is better to inspire the heart with a noble sentiment than to teach a fact of science, and because truth, honesty, nobility of character, good manners and a proper regard for the rights and feelings of others are of much greater value to the child than all the mere book-knowledge in the world. It ought not to be necessary for me to suggest that the personal actions and behavior of the teacher are of supreme importance in moral training. Teachers who are not perfectly truthful infect their pupils with falsehood and deceit; those who can not control themselves and disregard reasonable rules and regulations destroy the regard for law and order in their pupils, and help to increase the army of anarchists. The child should be taught to rely on his own powers, and be made to feel that he is an important element in the social organism; that it is his duty to work, not only for his own individual advancement, but to do everything in his power to promote the health, happiness and welfare of his fellow men.

Punishments.—The pendulum of public and professional opinion has swung far in the opposite direction from the harshness and undue severity of our forefathers. While in the great majority of cases this benign rule is salutary and highly commendable, still in many instances it is so obscured by namby-pambyism and hypercritical pretensions on the part of a certain class of judges and teachers, who strive to gain popularity by condemning corporal punishment in any form, that it not only demoralizes the pupils and furnishes a constantly increasing supply of material for our jails and penitentiaries, but it is also supplanted by much more brutal and inhuman forms of punishment. How many teachers and superintendents who would not give a boy a richly deserved whipping with a switch or soft strap, for fear of leaving discolorations on the skin, will pull his ears, strike him over the head with a heavy book or the hand, grasp him by the shoulders and jam him down into his seat. If it is necessary to resort to corporal punishment in a school, let it be administered only after careful investigation and due deliberation, calmly and without passion. Superficial discolorations, caused by a light switch or soft strap will not injure any boy who really deserves corporal punishment, but may do him a great deal of good.

Conclusions.—In conclusion, then, I desire to emphasize the following points:

1. The physical, intellectual and moral powers of the pupils should be developed at the same time.

2. Parents and teachers should thoroughly appreciate the fact that in its development the child is an epitome of the development of the race, and possesses many of the impulses and passions incident to the savage, barbarous and semi-civilized phases through which the race has passed, and that, in order to attain the best results, the instruction must be carefully adapted to the ever-changing, ever-varying needs and to the comprehension of the child.

3. As "teaching is the art of promoting human growth," the successful teacher must understand his own powers and limitations; he must understand the growing pupil and be able to put himself in the latter's place, and he must have a thorough knowledge and grasp of the subject taught. Teachers should have a more thorough and comprehensive knowledge of the laws of mental development; a better understanding of educational methods and the best means of imparting instruction. To insure such knowledge and teaching power, the rank and file of teachers should have a more thorough education, a more careful professional training and preparation for their work, and, last, but by no means least, they should be better paid, and thus encouraged to make teaching their life-work.

4. We need more enthusiasm and less routine; more original investigation and search after truth for the truth's sake, and less cramming for examinations; less talking and lecturing on the part of the teacher, and more time devoted to training pupils in systematic and logical analysis, and in clearness and accuracy of expression.

5. Then, too, not so many studies should be pursued at the same time, but the work should be more thoroughly done and a stronger grasp of the fundamental principles on which all true education depends should be secured. To get time for such training, the number-drill and arithmetic, together with other formal and abstruse work should be greatly curtailed or entirely omitted from the primary grades and the children should be given greater opportunities to study natural objects in their natural surroundings. The study of flowers, trees, rocks, birds, animals, insects, etc., in their natural conditions and environments is of infinitely greater value to the pupils than the fragmentary conception of such things that can be given to them in the schoolroom in the midst of artificial surroundings. In addition to imparting more exact information, the outdoor excursions furnish healthful exercise, inspire enthusiasm, rest and strengthen the brain and mind and elevate the pupils morally, while the indoor study of such objects soon becomes a drudgery and is of comparatively little benefit.

6. More time and attention should be given to manual training. This training of the muscles develops the motor centers in the brain, discharges the accumulating nerve force in the motor centers, develops and strengthens the association fibers between the various brain centers and permits the higher brain centers to develop normally and store up power. This gives the student a richer sensory content, a more harmonious physical and mental organization and a better-balanced moral nature.

7. Greater care should be exercised in promoting the health and proper physical development of the pupils.

8. All harsh and dangerous punishments should be banished from the schools.

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THE CONTROL AND PREVENTION OF EAR DISEASES AMONG SCHOOL CHILDREN.*

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History shows that it is difficult to develop equitably the mental and physical nature of human beings, and that periods noted for great bodily vigor are often deficient in corresponding mental growth. Even now, with added wisdom as to their co-relation, and the best intentions, undue stress is too often laid on one or the other. So in the recent past the mental condition of the child has received the bulk of the attention of educators and it has remained for the past decade to bring into prominence the fact that mental health and activity is not an independent entity, but is inextricably connected with the physical condition. To-day physical examinations are instituted in nearly all our colleges, in most of our preparatory schools and in many advanced private as well as public schools.

Perhaps no physical function lends itself more to mental activity than acute hearing. Whether in the human race hearing is present at birth or some months thereafter, it is easily observed that this faculty dominates the earliest sense impressions. As a human being is first of all a social creature, dependent on human intercourse for mental stimulation and for food-thought, the faculty by which we obtain this must affect tremendously for good or evil the mental and, indirectly, the physical condition. The truth of this can be most readily seen by noting the effect of its absence. Then the

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important part that sense plays in developing the mental condition and character becomes apparent, and we find that the word "deaf" is almost instinctively followed by "dumb," and that together they have an implied meaning beyond the statement of the physical condition, being synonymous with stupidity, moroseness, laggardness, and want of ambition. There are wonderful and noted exceptions to this, but we speak of the average.

Many a supposedly stupid child has really a bright mind, but suffering from undetected or neglected defect of the hearing, is not fitted to grasp instruction and information imparted for the benefit of large classes of normal children, and the hurried teacher or parent, unable to give the particular attention demanded, the child falls farther and farther away from the ordinary standard. Now, deafness or partial impairment of hearing is no rarity in school children. According to statistics, a degree of impairment in both sexes of one-third or more from the normal standard exists in both ears in about 7 per cent., and from 13 to 25 per cent. in one ear.[1] Of course, the deaf mutes and idiots are not included in this percentage. It is less frequent than deficient eyesight, which, according to Allport[2] [3] is present in from 25 to 50 per cent. of school children. Investigations looking to the obtaining of statistics may seem to flavor a little of paternalism, but without doubt it is of direct benefit to the child, the parent and the teacher, as well as to the human race, and can readily be justified on these grounds.

It is becoming increasingly difficult for the head of a family to make a living, and his labors leave at best but an hour or two for his family, and the recognition of this overtaxed home life tends more and more to throw part of the responsibility, formerly borne by the parents alone, for the children's physical well-being on the school authorities and teachers. That part of the children's physical being which more especially concerns the teaching authorities is that concerned with the acquisition of knowledge, and, therefore, any deficiency in sight or in hearing interferes with the work they are expected to accomplish, and often explains why some children are so backward, even at times almost stupid, with their work. The advantage of testing the sight and hearing and the observation of any deficiency with a further step looking to its correction must at once appeal to all who have the welfare of the school child at heart. Recognizing these facts, several Western cities, particularly Minneapolis, Milwaukee and Chicago, have tentatively applied methods and suggestions looking to this end with advantage for a varying period of years, until now Dr. Allport's methods, or modifications thereof, have been adopted in them all. As defects of vision are more obtrusively apparent than those of hearing, eye examinations alone were originally advocated. Now the ear being included the observations are much more valuable.

Omitting all reference to the eye examinations, and coming around to the question of the hearing, we will find that the tests can be easily made with a fair degree of accuracy.

If the pupils are examined by the teacher, the work should be done in a fairly large room, preferably before school hours, and each case examined should be asked, whether he has pain in either ear, whether he ever has discharge or odor from either ear, whether he breathes freely through either nostril—he can determine this by holding the finger over either nostril, breathing through the other—whether he usually breathes through his mouth, whether when he awakes mornings his throat is dry. Now, closing one ear with a piece of rubber placed over the end of the child's finger, ask him whether he can hear you distinctly while you are talking to him at a distance of twenty feet; ask him questions requiring direct answers while at this distance. Then take a watch and hold it about five feet from his ear and ask him to tell you when he hears it, gradually approaching it nearer and nearer to the ear. It should be heard at least three feet or more from the ear. Now test the other ear in the same way.

If, in any of these respects the pupil seems to be defective, the fact should be noted on a printed sheet and the parents notified of such deficiency and advised to consult any reputable specialist.

Of course, this work would probably be more accurate if placed directly in the hands of a school physician salaried by the city—the statistics gathered by him might prove of great value, as he undoubtedly would keep accurate records of all the cases examined and would be able to classify cases and conditions and produce reports which would be of service to the medical profession, as well as the teaching staff, whereas the teacher, having neither time nor knowledge to do this work, can be expected only to keep a list of the children examined and to record the cases of impairment of these senses, losing all the other valuable information obtained from testing the healthy children.

Dr. Allport's original suggestion for conducting these tests of the special senses was to have an oculist and aurist appointed by the board of education, who should superintend the tests, collect data, make reports, etc. The examinations were to be made by principals and teachers; those pupils found defective, with their names, condition, etc., were to be enrolled on statistical blanks, on which in due time the result of treatment on special organs and general health and conduct should be noted. These blanks were to be handed to the superintendent and to the board oculist and aurist, who were to file them and report on their findings to the board of education.

As, however, boards of education are not always kindly disposed toward this method, objecting in some cases, to the appointment of physicians, in other cases objecting to compelling superintendents keeping statistical reports, other expedients were adopted. Such objections existed in the Chicago schools,[4] [5] where now the examinations are made by the teachers and principals in accordance with the instructions of Allport's combination card, and which has careful instructions for the guidance of teachers appended. The Milwaukee public schools use a sheet and warning card, by Dr. Würdemann, which is similar to the Chicago card, and contains in addition instructions for ear examinations.[6]

By means of systematically pursuing this work the teacher can become a force for good in overcoming deafness and deficient mental development of the beforementioned 13 to 25 per cent. of school children, or detect incipient trouble when discovery and prompt treatment is worth so much to all concerned.

By such means as these are the parents aroused to take a more thorough oversight, and the common causes of ear disease[7] in children will be the better known and avoided or overcome by their care. To-day, enlargements in the throat and nose, perhaps the most frequent of the causes of such disease among children, are usually neglected and as for catarrhal conditions, they are but rarely treated in children, unless they become sufficiently grave to affect the general health. Among the frequent underlying causes of deafness[8] among children is the

throat and nose complication of the acute fevers—unfortunately, there is often no effort to prevent the development of ear involvement, because the disease itself demands all our attention, but even then much can be done by the prompt application of common sense to prevent it assuming often a serious form.

The enlargement of the nasopharyngeal gland, or third tonsil, results often in violent ear-pains followed by inflammation of the middle ear, with suppurative discharge, or it may cause deafness without perforation and suppuration, and even without pain.

Patients will soon learn that the thorough scrubbing of the ear, instead of being a health measure is rather a cause of disease; they will also learn that the nose douches so prevalently used are generally misapplied. When used, the solution should invariably be warm and the pressure employed be barely enough to force the liquid through the nose into the throat.

They probably will soon have called to their attention that vomiting in children is a source of ear disease, especially, I hope, will they learn that the regurgitation of food in infants may cause serious mischief in the ears. By the application of common sense with experience, they will be taught that the period of dentition is a critical period, so far as the integrity of the throat, nose and ears is concerned; that this is a period of increased activity of this region and any irritant applied here at this time is apt to be followed by ill effects.

All these thoughts will, I hope, be stimulated into existence in the average parent through such systematic examinations of these special senses and prove of great value to all concerned.

It follows, necessarily, that the examination of nose and throat is imperative whenever the hearing is deficient, and that inflammations or lesions of nose and throat liable to involve the ear, but not yet affecting them, can not be taken too seriously. Pharyngeal adenoids, so common in children, as well as enlarged tonsils and polypi, should be removed as soon as possible[9], and catarrhal affections treated and hypertrophies reduced before the ear structures become affected. Unless this be done the needless sacrifice of life, hundreds of children dying yearly from middle-ear disease discovered only after death—as well as the sacrifice of health and usefulness—will simply continue indefinitely. Such desirable results will be greatly facilitated by the systematic examinations of the hearing of all school children and a statement of the necessities of any defective case, to the parent by the school physician or teacher. Pupils, parents and teachers would alike be benefited by such a course. The physician also would gain much, in that he would receive his cases earlier in their history, and would usually have a remedial condition to deal with in place of the thankless, tedious, up-hill fight attended with little satisfaction, either in profit or in gratitude and appreciation of his patients, and sometimes even of his brother physicians.

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THE ANTECEDENTS OF ORGANIC HEART DISEASE IN CHILDREN.*

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In every dispensary or hospital for the treatment of diseases of children, and also to almost the same extent in private practice, there are seen many cases of organic heart disease in later childhood where only few facts bearing directly on the etiology can be found. In adults the case is different, because in them many of the organic valvular defects and many of the murmurs produced by degenerative changes in the myocardium are due to wear and tear necessitated by the conditions of life. In adults also disease of the heart secondary to lesions in other organs—notably the kidneys—and to errors in metabolism is encountered more frequently than in the case of children. In childhood these factors do not enter except in occasional instances, and the occurrence of endocarditis or of myocardial changes giving rise to cardiac signs and symptoms must in them be attributed to the occurrence of infection.

Under the heading of infection should be considered not only such diseases as are accompanied by a classical symptomatology, and therefore designated by a specific name, but also the minor affections which are so frequent in childhood. This frequency is due undoubtedly partly to the "tenderness" of the skin and mucous membranes at this period of life, partly also to the fact that many of the major infections especially attacking children are apt to leave the mucous membranes in a condition very liable to infection. I have elsewhere shown that angina can readily be followed by endocarditis, and while this was no new discovery and had been recognized by others, I feel that the very occurrence of such an association should cause us to feel that other minor and frequent local lesions may be followed by inflammatory disease of the valvular apparatus of the heart. Ordinarily in obtaining the past history of cases of cardiac damage positive facts can be obtained only in regard to such diseases as the eruptive fevers, while ordinary colds, angina, gastrointestinal infections and similar apparently minor conditions are either forgotten or are considered too trivial to mention. Nevertheless any of these, it is fair to presume, may possibly give rise to visceral complications if the infecting agent is sufficiently virulent or the vital resistance of the child's tissues sufficiently lowered.

For the purpose of obtaining some idea as to the relative frequency of various diseases occurring in the past history of children with chronic heart lesions, I endeavored to study the notes of a number of cases of the latter trouble. The study was necessarily incomplete owing to the impossibility of obtaining accurate past histories of cases, especially in hospital work. Many of the histories that were available to me I did not use because of the absence of internal evidence that a sufficiently careful inquiry had been instituted by the

* Presented to the Section on Diseases of Children, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

interne. For instance, in a very large number of cases there is no evidence to show whether the interne had questioned the child's parents in any but a most general way, while many stated that the child had "passed through the ordinary diseases of childhood." The number of cases, therefore, for study had been disappointingly small, but I hope that the figures given may at some time be combined with others and make a number sufficient to permit us to arrive at some conclusion. Excluding all those which do not come up to the standard which I had fixed in regard to accuracy, I found that there were only 75 histories remaining which I was able to study in the time at my disposal. I have purposely omitted from these cases previously reported by me as having followed minor infections, inasmuch as the addition of these cases would give an undue proportion of examples of cardiac damage following one particular source of infection. I have therefore taken without selection, save in regard to completeness and accuracy of the history, consecutive cases of cardiac disease admitted to the hospital because of heart lesion. Of these 75 cases 3 were said to have never had any prior illness before the onset of cardiac symptoms. The most frequent preceding illness was rheumatism; this, of course, would have been expected; yet among the 75 cases a history of preceding rheumatism was obtained in only 34, considerably less than 50 per cent. That this low percentage represents fairly accurately the frequency of rheumatism on these cases is rendered certain from the fact that owing to the well-recognized association of articular rheumatism and cardiac lesion, its prior existence would certainly have been determined in any case where the past history was investigated at all. Rheumatism was the only preceding disease mentioned in 16 of the cases; in the other 18 cases it was variously combined with a history of measles, whooping-cough, chorea and other ordinary infections. In a control series of 75 cases admitted for troubles other than cardiac disease, rheumatism occurred in only one case.

The history of measles was that given most frequently after the disease last mentioned. The occurrence of this disease was noted in 24 of the 75 cases, while in one case it was the only disease mentioned in the past history. It would, of course, be unfair on account of this frequency to consider measles the next most frequent causative factor after rheumatism, inasmuch as measles is undoubtedly the most frequent infection in childhood; in the 75 control cases without cardiac disease measles was noted 43 times. Whooping-cough preceded cardiac lesions in 19 cases, and was the only infection noted in one case. Among the 75 control cases, whooping-cough had occurred in 37. This relative proportion in the two sets of cases must be considered as accidental, as it is impossible to conceive of any preventive rôle that could be played by whooping-cough in relation to cardiac disease. The disproportion of chorea in the past history of cardiac and non-cardiac cases is very marked. Among the 75 cardiac cases it had been present 16 times, while it had only occurred in 2 of those without cardiac lesion. Scarlet fever had been present in 11 of the cardiac cases, in 3 of which it was the only preceding illness. Among the 75 cases without cardiac disease scarlet fever had been present in 7. The frequency of diphtheria in the past history of the cardiac and non-cardiac cases is so nearly equal—8 in the former and 9 in the latter—that it can be thought to have practically no influence. Pneumonia preceded the development of cardiac symptoms in 6 cases, while its relative frequency in children may be somewhat determined by the fact that it had been present in 4 of the 75 cases without heart lesion. Curiously enough, varicella resembled whooping-cough in the relatively greater frequency with which it had been present in the cases of children with healthy hearts as compared with those with cardiac disease. In only 5 of the cases had chicken-pox been present, while it occurred in the past history of 14 cases of diseases other than those of the heart. Mumps occurred in the past history of 4 of the cardiac cases, in only one of those without heart disease. Typhoid fever was mentioned in the past history of 4 in each class of cases. In 2 of the 75 cases of heart disease repeated attacks of tonsillitis had occurred, in one no other disease having been experienced, in the other the patient having suffered from measles and whooping-cough. The fact that among the 75 cases without cardiac disease there were none giving a history of repeated attacks of tonsillitis has but little value as positive evidence, because such attacks are not made the subject of ordinary inquiry and are not readily remembered by the parent, while I strongly suspect that in the 2 cases where such a history had been elicited the obtaining of the information was due to direct questioning by internes who knew of my interest in this subject. Among the 75 cases, the other diseases mentioned as having occurred in the history of the patient were cerebrospinal meningitis, 2 cases, one of which had had no other illness but pneumonia, and the following illnesses had each occurred in one case: meningitis, rubeola, gastro-enteritis, "indefinite illness," pleurisy, chronic bronchitis, acute nephritis, cholera infantum and osteoarthritis.

Without further analyzing the results of the examination of these 75 histories, I would merely mention the main facts in regard to the diseases ordinarily supposed to be frequently followed by endocarditis. Rheumatism, as I have said, had occurred in only 34 of the cases, chorea in 16, scarlet fever in 11, diphtheria in 8, while in 14 of the cases none of these diseases last mentioned had been experienced by the child. If the small control series of cases can be taken as any guide, it would seem that measles, varicella, whooping-cough and typhoid fever have little or no influence in the production of endocarditis. We must therefore attribute many of our instances of inflammatory lesions of the endocardium to the slighter infections, such as coryza, various skin lesions, affections of the mucous membranes of the throat and nose, and the infections of the gastro-intestinal tract. The number of cases analyzed by me is very small, yet I believe that as far as they go they point to the necessity, which theoretically every one realizes, of a careful examination of the heart, both during and after slight infections, and that this organ should be a matter of careful inquiry as much in those last mentioned as is the case with the more severe infections like rheumatism and scarlet fever.

DISCUSSION ON PAPERS OF DRS. BECK, STUVER, BARTLETT, LAUTENBACH, AND PACKARD.

DR. C. F. WAHRER, Fort Madison, Iowa.—I sometimes think it would be a good thing if at some time in life every physician had been a teacher. It may be I have been prejudiced by my own experience. For a number of years I was a teacher, and had quite a varied experience in this respect in academies, high schools and colleges. This is a great problem before us, because we lack the co-operation of the municipal authorities in the larger portion of the United States. We have no systematized laws existing between health authorities and schools, and when physicians wish either as private citizens or professionally to initiate reforms they meet with opposition from their professional brethren, who say that they are only doing

this to advertise themselves. You see we have trouble in our own ranks. It is true that in large cities like Chicago, Philadelphia, St. Louis and New York there is an effort made to exercise some medical supervision over the school children, but that is not yet as it should be. In the rural districts, and the smaller cities this is all left to what influence we can exert through our patients.

I want to say regarding overwork, that I have very little if any sympathy for the kindergarten system, for, already overcrowding and overcramming have taken hold in these schools, and the little ones have been taken away too soon from their parents. I think we send our children to school too early, demand too much of them, and the school curricula are too extensive. In some schools there are children of 8 or 10 years of age who should be spending most of their time on fundamental principles of education, yet these children are already studying Latin, algebra and abstract thinking. The result is an abnormal product—a prodigy—of which I am sorry to say parents and the public generally are often strangely proud. Many children we know are handicapped by disease; they are choreic or have other nervous troubles; they are affected with tuberculosis or scrofula, whatever that may mean. These children should not be in schools, but should be out-doors playing and breathing fresh air instead of being confined in schools and compelled to study from 9 till 12, and from 1 to 4 o'clock, and then take home a satchel full of books and study until bed-time. This is overwork, and it produces neither a healthy physical system nor mental system. Many children are handicapped by chorea. It may be of the kind produced by an affection of the nervous system; it may be of the hysterical kind. Not very long ago, what might be called an epidemic of chorea broke out in the schools of my town. A child had been promised a bicycle, but did not receive it, and the result was an attack of chorea. Very soon afterward there were about a dozen children in that school affected with chorea. I tried to interfere, but was told it was none of my business.

I believe if there is any one thing on which we can use our influence, and which needs our help, it is the improvement of our public school system. In the large cities teachers are overworked because of the constant additions made by superintendents, often merely to gratify personal vanity. Instead of adding more work to the already overburdened pupils and teachers we should endeavor to lighten this work. I am neither pessimistic nor retrogressive in my ideas, yet I wish to ask, in spite of all the popularization of education, how many Miltons, Homers and Platos have we had in the last four centuries? We can not make scholars of all persons any more than we can make gymnasts and sprinters out of all. The examination system is the most abominable one ever devised. What is the use of a competitive examination between a pupil who learns a lesson at a glance and another who plods and studies for hours over the same lesson? You might with equal propriety institute a comparison between a thoroughbred trotter and an ox for speed and their respective merits as coachers. Could you not decide the matter without an exhibition of speed between the two? So can a teacher who has had children under her care for months, nay, years, decide which one should be promoted and which one kept back without the nerve-exhausting and unfair test of an examination every month or two. Mere knowledge, the acquisition of so many facts, is not what counts in the equation of life, but the use any one can make of what knowledge he possesses, is the real value. At present, the only thing we can do is to create healthy sentiments among our patients, until laws are passed on these lines.

DR. E. E. GRAHAM, Philadelphia.—The mere fact that these processes are developmental shows that they are normal. It is just as normal for the child at the age of 6 or 8 years to be going through certain developmental processes as it is for an infant of seven or eight months to get the first tooth, or the child of 4½ years to complete dentition. There can be no question that during the development of the function of an organ, that organ can be easily overworked; but it is a great mistake, I think, to place the blame on the former development of a function and not on the strain or overwork of that function. If we are willing to admit that during the period of early school life—from 6 to 9 or 10 years—there are certain normal processes going on in the body, and, of course, we are willing to admit that the developmental process is very active at that time, why should we put down such normal process as a cause of disease, or of a "break-down?" Instead of making that contributing cause we should put the blame on the strain of such things as weekly competitions. In the public schools, the children are graded almost invariably every week or two. In later life, as in medical schools the grading is done at the end of the first, second, third and fourth year, and it is well known that the strain on the ordinary medical students at that time is very quickly recognized; the students are very much prostrated after examinations. Now, if the child of 6 or 8 years is put through this test every week or two; if twice a year the child is graded and made to understand that a certain examination must be gone through successfully or else the work of the previous six months is lost, there is little doubt that the nervous powers of these children will be overstrained. Again, the school hours are too long, and the terms are too long; for, while at this season of the year the medical schools are closed up, the little children in the public schools are still attending school. This is a question which we should face and consider, as we meet with it almost every day in our work. We should consider also if improper diet and insufficient sleep are not often contributing causes.

DR. J. L. SUTHERLAND, Grand Island, Neb.—We have had it impressed on us year after year, that our public school system is very faulty. The more one studies the question in all its bearings, the more he is apt to think it a stupendous undertaking to remedy the evil. To my mind, outside of the larger cities perhaps, this evil should be overcome to a great extent by simply instituting two measures. 1. Making the qualifications of the teacher greater, and 2, allowing him a little more latitude in the exercise of his functions. I mean by the first that the teacher should be required to know a little more of human nature. Teachers should be able to gauge the individual capacities of the pupils under their charge, and should grade the requirements accordingly. No teacher should be employed at the present day who has not the ability to tell, after a few months, whether any pupil under his charge is or is not fit to pass to the next grade. A little more latitude in this respect would enable us to do away with the examinations for promotion, and by this alone, a large part of the present existing evil would be thus eliminated.

Another thing, politics has too much to do in our school boards. A man who puts himself forward in the interests of our suffering school-children, is looked on as a crank, and no matter how superior his education, if he does not belong to the political combination he can not get on the school board; and even then, a comparatively ignorant majority on the board will prevent his doing much good. Whenever a physician in his own humble way undertakes individually to correct some of these evils, his motives are often impugned by some of his fellows, who claims that he does it for his personal aggrandizement. I wish to say that there is too much in our school curriculum, and much of it is absolutely unnecessary. It would be far better to let the younger element out to study birds, flowers, rocks, etc., part of the time. In a paper which I presented to our state society three years ago, I touched on this subject, taking the liberty to criticise our public school system and to offer a few suggestions. And I repeat now, that if these evils are ever to be eradicated, the medical profession will have to do the larger share. We will have to keep on in the rôle of educators, and we will have the consciousness of having tried to do our duty, and perhaps will succeed in causing both parents and teachers to see that the physical well-being of the child is entitled to some consideration, and that education means something more than the "cramming" a young head with a certain number of facts, many of which it does not understand.

DR. FRANK ALLPORT, Chicago—I am particularly interested in the examination of school children's eyes and ears, and what I say will bear on this. Some years ago, investigations along these lines were made in Germany. Ophthal-

mologists were appointed by municipal authorities, to go from school to school and personally examine scholars. Valuable deductions were obtained. The same plan was operated in Philadelphia by Risley and his associates, but while the method of examination answered very well in monarchial Germany, where people are more accustomed to obey authority, it proved too oppressive in America, and so much ill feeling and jealousy was engendered among the laity, and in professional circles, that the plan was abandoned, and never revived.

Some years ago, when living in Minneapolis, I conceived the idea of a systematic examination of school-children's eyes and ears by teachers, which I placed in operation in that city at the request of the Board of Education. The plan consists simply of the annual examination of children —under the instruction of an eye and ear surgeon, appointed by the board—by teachers, by means of simple and pointed questions, easy to ask and easy to answer. Teachers say they feel unqualified to act in this capacity. This is an unfounded objection. Teachers are not expected to become physicians or diagnosticians. They are simply requested to ascertain a few easily accessible facts, and to separate those children having good eyes and ears from those having bad eyes and ears. It is surely simple enough to ascertain whether a child habitually suffers from red eyes, headaches, cross-eyes, discharging ears, mouth-breathing, and whether they can read certain print at given distances, or hear a whisper at a certain number of feet. These are fair samples of what is to be done, and I am sure you will agree that it does not require a medical education, or a great intellect.

There are ten questions to be asked and answered, and the result will disclose the existence of most serious eye or ear defects. The teacher will not know what the defect is, but she will know that *something is* wrong, and that is sufficient. If a defect is discovered, a card of warning is sent to the parent notifying him of the result, and advising that some eye and ear surgeon of repute, or the family physician be consulted, either privately or at some dispensary. Bear in mind, however, that the parent is not *ordered* to do this; he is simply *advised*. This advice he may totally disregard if he wishes, the responsibility now rests on him. Many parents pay no attention to the cards of warning at first, but do so later, after discovering beneficial results in their neighbors' children. Many never do anything, in spite of repeated warnings. This is regrettable, but it should not discourage us, as a fair proportion of cards produce responses, and good results, and this should reward us for our efforts.

School authorities sometimes complain that the extra labor by teachers is a serious objection. This was a considerable element of obstruction, when the plan was first inaugurated, and a principal examined perhaps 2000 pupils. I have, however, lately recommended that the tests be made by the room teachers, who never have more than 50 pupils under their supervision. By thus subdividing the work, and keeping a few pupils after school each day, a room can be easily examined in a week, and therefore every room in a city can be examined in the same length of time. Besides this the room teachers are better able to make the tests, as they are better acquainted with the defects of their pupils than the principals. Under such a system the 250,000 pupils of the city of Chicago have been easily examined during the last two or three weeks, without inflicting hardship on anybody. I believe that these tests will *lighten* a teacher's labor, for many children are a burden to teachers, and exact much extra work from them on account of defective eyes and ears which, when relieved, proportionately lessen the teacher's work.

An important point in favor of these tests is their cheapness. No salary is involved, and the only expense is for the printed matter, which is merely nominal. For instance, the cost to the city of Chicago will not exceed $200 per annum. In answer to the question of a gentleman, I will say that these charts, with test letters, and teachers' instructions may be obtained from Almer Coe, optician, 65 State street, Chicago. In answer to another gentleman, I will say that the tests should be made annually, as new children come into the school each year, or pass from grade to grade, and eye and ear defects are liable to occur in children who last year were healthy. These tests are being received with great favor, over most sections of this country, and I am recently in receipt of a letter from Mr. Bha-Bha, inspector-general of education in Southern India, requesting me to send him charts, literature, etc., as he is about to place the matter in operation in India. I find as a result of my own investigations and the investigations of others, that about 33 per cent. of school-children have defective eyes, and perhaps 20 per cent. defective ears, noses and throats, and I leave it to you to imagine the enormous benefit that must follow the general and systematic examinations of school-children's eyes, throughout the civilized world.

DR. EDWIN ROSENTHAL, Philadelphia—We very frequently notice in Philadelphia cases of hysteria among school-children, especially in precocious children. I have had such children under my care, and have sent some of them to the ophthalmologist simply to learn what effect the fitting of glasses would have on these children. I think you will find almost as many eyeglasses on the children of Philadelphia as among the children of Boston. I believe too little stress is laid on the influence of the family physician on the school life of our children. We have such inspectors in Philadelphia, but they only take into consideration the diseases that are infectious—not only diphtheria, scarlet fever and measles, but cutaneous affections of this class. The system has only been in operation in Philadelphia, about one year, so we can not say how much good will come from it. The family physician has more influence with the school-children than any one else. He has frequently criticized the attitude of the medical inspectors in Philadelphia. This is a mistake, for while these inspectors may not be prominent physicians, they endeavor to do their duty conscientiously and well. If Dr. Allport would bring up this matter of making tests before the school teachers' convention I am sure it would have a great influence for good.

DR. L. J. LAUTERBACH, closing the discussion—The *Ladies' Home Journal* stated in an article that 16,000 children had been removed from the schools of five American cities because of school break-down. This is not such a large number. If you take 250,000 children—the number in Chicago's schools—I am sure you will find a large proportion of those children who will be compelled at some time in the school year to stop their studies. Even this large number might stop work in Chicago alone without being looked on as a very large disproportion, when you consider the frequency of sickness among children. There is nothing more misleading than indefinite and inaccurate statistics. In order to make the above accurate the cities should have been named. Another interesting fact brought out to-day is the one as to the mental development of different periods of school, particularly the fact that school children of 10 years can not fix their attention on a subject steadily for more than forty-five minutes at a time. I look upon this regular annual examination as really a means of preventive medicine. As before indicated, this is not a method for ordering glasses, but when you take into account the numberless cases of chorea, and the frequent development of epilepsy or other nervous disorders arising from a peripheral irritation in hundreds of cases, and remember how busy is the average American parent and how little time he gives to the physical health of his children, the importance of having the teachers make these examinations of the hearing and sight of the pupils must be obvious. There is nothing so wonderful as the supervision, both personal and systematic, in the German schools. By persistence in definite lines of work and a limitation to a few necessary studies these children while still young exhibit a proficiency in languages, sciences and other subjects without any difficulty. One of the speakers seemed to indicate that physical examinations should perhaps be put in the hands of medical inspectors. I am afraid that this is a mistake, and that it would lead to a great deal of opposition. Our object should be to have all the school authorities—whether they be saloon-keepers, merchants or professional men, on our side. It is an unfortunate fact that the moment a doctor wants anything, no matter what it is, or what his object, he will be misunderstood both by his professional

brethren and by the general public. Therefore, everything which we do in this important matter must be so conducted that all the forces needed to help must be secured, and all opposition avoided, if such is possible.

ARTHRITIS DEFORMANS.

ITS CLINICAL FEATURES, DIFFERENTIAL DIAGNOSIS AND PATHOGENESIS.*

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If one may judge from the multiplicity of names that have been applied to arthritis deformans its nature is not so well understood, and I am confident that it often goes unrecognized and is frequently mistaken for some other disorder. In proof of this the disease is variously described as rheumatoid arthritis, chronic rheumatic arthritis, rheumatic gout, rheumatisme noueux, osteoarthritis, pernicious arthritis, chronic villous polyarthritis, arthritis deformans, deforming arthritis, etc. The designation arthritis deformans, which is generally employed in this country and in Germany, seems to me the preferable; it is sufficiently indicative of the distinguishing features of the disorder; it suggests no relationship to any other disease, such as rheumatism, and it is non-committal as regards its etiology.

I have thought to summarize briefly the distinguishing clinical features of the disease, to speak of the differential diagnosis, and to detail the results of some recent scientific investigations which I believe materially assist in the elucidation of the nature and pathogenesis of the disease. The study of these collectively will then enable us to appreciate fully the therapeutic indications.

CLINICAL FEATURES.

As we meet it clinically, arthritis deformans may develop either acutely or chronically. If the former be the case, the affection is always polyarthritic; if the latter, it is generally polyarthritic, but it may be monarthritic. The acute polyarthritic form, although it may manifest itself as a primary disorder, usually develops secondarily to some acute infectious process, such as influenza, tonsillitis, gonorrhea, etc. It usually affects young women, though it is also met in later life. In many respects it resembles acute rheumatism. In fact though the occurrence of acute arthritis deformans is generally conceded, Spender states that while it would be rash to assert that there is no such thing as acute arthritis deformans, the condition so described is usually a pyrexial rheumatic forerunner. This, he believes, in predisposed persons leads on to arthritis deformans proper. In the great majority of persons, however, there is no such predisposition.

The disease generally commences acutely in the smaller joints of the hands and feet. Sooner or later the larger joints share in the process and the disease may sometimes rapidly progress until there is scarcely an unaffected joint in the body. The joints involved present an almost pathognomonic spindle-shaped appearance—the fusiform variety of Garrod as contrasted with the crippling. In some cases there is considerable accumulation of synovial fluid and the ligaments and periarticular tissues seem stretched and tense; in other cases the interarticular fluid is less in amount, but the ligaments are more infiltrated, thickened and softened, and the joint is correspondingly soft and doughy to the touch. Pain is usually a fairly prominent symptom. At times, where contrasted with the manifest alterations of the joints, it seems rather insignificant. It may, however, be marked, and is always increased on manipulation and motion of the affected joints. Fever usually accompanies the attack, but it is only moderate and of short duration. Muscular atrophy is almost always present from the inception of the attack. It is especially characterized by its selective action on certain muscles or groups of muscles. The lymph-glands in the neighborhood of the affected joints are often swollen and may be tender to pressure. In addition there may be slightly increased perspiration of the extremities, which are often cold; mottling and freckling of the skin; and other vasomotor and trophic disturbances. While, after the lapse of a certain time, the general health of the patient may improve somewhat, the condition of the affected joints gradually becomes worse. Deformities increase; motion becomes more restricted; adhesions between the articulating surfaces of the bones develop; the ligaments become thickened and indurated; osteophytic out-growths in and about the ligaments, bursas, tendons and their sheaths make their appearance; muscular atrophy becomes more marked; dislocations may occur, until the clinical picture resembles that presented by the disorder when chronic from its commencement. In the later stages of the affection, the nature of the case under consideration can be recognized only by a knowledge of its clinical course.

Chronic polyarthritis deformans may be a primary or a secondary affection and it may develop in a variety of ways. It usually comes on insidiously—without premonition. In some cases, however, there are premonitory symptoms, such as paresthesias, neuralgiform pains, irregular mottlings or frecklings, local perspirations, muscular pains, increased myotatic irritability, accelerated action of the heart, etc., but if present they generally pass unnoticed, or are attributed to some fleeting affection. And indeed in many cases such symptoms are correctly ascribed to some other disorder, even if arthritis deformans does subsequently develop. Generally, as intimated, there arises more or less suddenly a painful swelling of one of the small joints of the hand. Soon after, the corresponding joint of the opposite hand may become similarly affected. The pain and swelling may then entirely subside, only to recur, however, in a short time and to progress until the disease is fully developed. Inquiry in these cases will usually elicit the information that the patient is a woman in the fifth decade of life. Garrod found that of 500 cases but 89 occurred in males. Some evidence of hereditary predisposition may be ascertained. The woman's family relations or more immediate ancestors may have suffered with arthritis deformans, gout, rheumatism, tuberculosis, or some one of the long list of nervous disorders. It has been asserted that the daughters of gouty fathers are somewhat prone to develop arthritis deformans. Heredity, however, is of much less significance in arthritis deformans than it is in any of the other diseases mentioned. In addition, the patient will probably have suffered with some derangement of the menstrual functions or she will have had positive disease of the genital organs; she will probably have been unusually exposed to the inclemencies of the weather, or she will have been subject to want, privation, worry, fright, undue fatigue, mental anxiety, or depressing emotions. In younger women the first manifestations of arthritis deformans may follow re-

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peated pregnancies in rapid succession, prolonged lactation, or a puerperium imperfectly recovered from. In other cases, those in which for instance, the foot or ankle is first involved, the patient may be under the impression that the joint must have been sprained but he or she is unable to definitely fix a date for the occcurrence of such accident. Under other circumstances, after some undue exertion a sense of weakness, tiredness, or stiffness develops in the back or in the posterior region of the neck. In a few days the corresponding vertebræ become more or less fixed and the disease is localized to this region. In still other cases a distinct injury seems to have preceded the definite localization of the disease in a certain joint; whereas in other instances, an attack of acute rheumatism or gonorrheal rheumatism appears to bear an etiologic relationship to the development of the arthritis deformans. There are various other ways in which the disease commences, but the foregoing will serve as types.

In whichever manner the disorder develops, in their subsequent course, all cases present many features in common. Perhaps one of the interphalangeal joints or a metacarpal-phalangeal joint is the first attacked. Not uncommonly, the joints of the first and second fingers are the first involved. Soon, however, the corresponding joints of the opposite hand may become implicated. Or a wrist may be the first diseased and a short time afterward the other wrist may present signs of similar involvement. Curiously the thumb often escapes implication, in some cases entirely, in others for a long time only, while in still others only its metacarpo-phalangeal articulation may become affected. In some unusual instances the last named joint is the one first involved. Usually the disease soon spreads to the foot and the metatarsal and phalangeal articulations exhibit alterations similar to those observed in the hands. Then the knee may become diseased, and this may be followed in more or less rapid succession by disorder of the elbow, shoulder, the temporo-maxillary articulation, and the joints of the trunk. Finally, such may be the ravages of the disease that not a joint in the body will be spared. The patient is then rendered absolutely helpless, but despite this, the poor unfortunate's life may be prolonged twenty or thirty years, until death ensues as a result of some intercurrent affection.

The two distinguishing clinical features of arthritis deformans are the deformities of the joints and the atrophy of the muscles. The former is such an obtrusive manifestation of the disease as to amply justify its incorporation into the designation given the disease. These deformities are especially characterized by their symmetric distribution and by the marked tendency they exhibit to involve the small joints of the hands and feet and the knees. The appearance of the enlarged joints varies somewhat in different cases and also at different stages of the same case. The enlargement may be slight or excessive and the joints themselves may assume almost any shape. The skin covering exhibits many and varied trophic alterations. It is usually thinned, glossy, and reddened. At other times it presents a bluish tint that is considered quite characteristic. As the conformation of the joint depends in part on accumulation of synovial fluid within the joint cavity and adjoining bursas, in part on thickening and infiltration and the structures about the joint, and in part on osteophytic new-formations and lipping of the articular surfaces of the cartilages and bones, the appearances vary in different cases. The joints are usually more or less spindle-shaped and this is especially the case in acute cases in which the accumulation of synovial fluid is likely to be marked, as also in acute exacerbations of chronic cases. In some chronic cases also the spindle-shaped appearance of the joints is well marked. In other cases, however, there is more or less of a depression between the heads of the articulating bones. This is evidently produced by softening and disintegration of the ligaments, whereby separation and misplacement of the bones readily result. In the eminently chronic cases, however, the swelling, as a rule, is extremely irregular. In these cases not only is there more or less accumulation of synovial fluid and infiltration and thickening of the ligaments, but there occur in addition, osteophytic out-growths and bony deposits in the ligaments, joint tissues, tendons, sheaths, bursas, etc., as well as lipping of the articulating surfaces, and the utmost distortion results. In some cases the bursal enlargement is markedly disproportionate to the bony outgrowth and leads to great irregularity in the conformation of the joint. This is sometimes well seen on the posterior aspect of the wrist; in many cases, however, it is well observed about the small joints of the hands. In certain cases such is the disproportionate enlargement of the bursas that their contour can be well made out. In some cases the synovial fluid is relatively inconspicuous and the joint is correspondingly dry.

Bannatyne, writing of the clinical aspects of these joint lesions, describes them so well that I am constrained to reproduce his words. He writes: "As to the eye, so to the touch, we find three conditions: *a.* A tense, elastic and resistent swelling with distinct fluctuation, often with secondary sac-like protrusions of synovial membrane—best seen in the joints of the fingers, and evidently caused by the presence of a considerable quantity of fluid under some tension. *b.* A soft, flabby, doughy feeling, as if joints, ligaments and all the surrounding tissue had undergone maceration. Over the joint-cavity there is a sort of depression in the middle of the otherwise generalized swelling and everything feels doughy or pulpy. There is seldom much fluid present in such cases, but they are most acutely progressive. It is usually a secondary stage of the acute form, and shows that much disorganization of the joint has taken place. *c.* The third condition is that described by the French under the name 'arthrite sèche.' In these cases the joints are enlarged and nodular and one feels that the heads of the bones have undergone enlargement; there is much crepitation on movement; joints can with difficulty be moved, and this even, if passive, causes much pain; and there may be ankylosis. It is usually a sequel of the more acute stages."

In every case of arthritis deformans there exists more or less deformity, but the degree of this varies somewhat in different cases. It is usually most evident in the hands and about the knees. In well-marked cases the deformities of the hands consist in deflection, extension and flexion of the fingers. Usually all three are evident in the same case, but in varying degree. The fingers are generally deflected to the ulnar side, rarely to the radial side. The ulnar deflection occurs from the metacarpo-phalangeal articulation, but in addition to this there is often a radial deflection of the terminal phalanx. The latter is generally attributed to osteophytic outgrowths occurring upon the ulnar side; the deflection of the entire finger, however, is

dependent especially on relaxation and softening of the ligaments, in part also on bony outgrowths and the action of certain muscles—the extensors. The fingers, in addition, are usually flexed and extended on the hand, and sometimes they overlie each other. In the early stages of the disease, these deflections may be more or less readily overcome; but as time passes they become permanent and irreducible. This results in consequence of the abundant growth of periarticular osteophytes. Deformities similar to these sometimes arise in the feet, but they are less common.

The knees are usually markedly deformed; they are flexed and fixed. Charcot long ago described the chief deformities, about the knees, as follows: 1. The lower end of the femur projects in front of the head of the tibia. 2. The internal condyle becomes less prominent. 3. The patella, thrown outward, rests on the outer condyle. 4. The head of the fibula projects externally. The ankle-joint is usually firmly ankylosed and the foot and great toe abducted.

Sooner or later the joints become ankylosed. This ankylosis is usually of the fibrous variety, which fact may be recognized by the slight motion possible on careful manipulation. At times, however, even very careful manipulation is provocative of much pain, and, in an effort to prevent it, the passive movement of the joint is resisted either voluntarily or involuntarily by the patient, and thus the character of the ankylosis is again disclosed. Under rather rare circumstances true bony ankylosis results, particularly in the vertebræ. In other cases, the ankylosis is more or less bony in that it is due to the interlocking of osteophytic outgrowths. Crackling on motion is usually well marked in all the joints. Except in the later stages, however, it is not essentially different from that elicited in other forms of arthritis. When complete denudation of the articular surfaces of the bone has occurred a peculiar, quite characteristic and almost pathognomonic grating sensation is produced.

Dislocations, though they do not arise in every case, are very common. They usually become more marked as the disease advances, but they are likely to be less evident in cases with extensive osteophytic outgrowth than in those in which marked destruction of the joints has taken place rapidly. They seem also to be less marked in joints that have been moved more or less, in the hand, for instance, that has been compelled to perform some labor, than in joints kept for a long time at rest. The dislocations may be complete or incomplete. They may result from extensive destruction of the structures that enter into the formation of the joints and from the increased tonicity of one set of muscles augmented by an relatively greater atrophy of the opposing set of muscles. They are especially liable to affect the fingers, wrists, knees and hip. In the fingers the dislocation is usually forward, the distal phalanx being displaced beneath the proximal ones; the wrist may be displaced either forward or backward; at the knees the tibia is generally displaced backward; at the hip the femur may be displaced in any direction, though it is usually backward.

Next to the joint deformities, atrophy of the muscles is the most conspicuous clinical feature of arthritis deformans. It is a very early and persistent symptom and is especially characterized by its marked selective tendency. It varies much in different cases; at times it is relatively slight, again it is extremely aggravated. It affects the interossei and the extensors principally, though dystrophic alterations will be found in all the muscles of the limb. At times but a single muscle of a group will be implicated; again all the muscles of that group. There sometimes occur muscular spasms that are of variable intensity and duration. At times they are extremely severe and produce great pain and the most grotesque distortions. Increased myotatic irritability is usually to be observed, and the tendon reflexes are generally slightly exaggerated. Sometimes there are fibrillary twitchings, and rarely slight reactions of degeneration—the latter, however, only in the presence of distinct peripheral neuritis.

Brief reference may be made to a number of other clinical features of arthritis deformans that are of only relatively less importance than the joint lesions and the muscular atrophy. There is rarely, if ever, any fever, except in the acute cases, as already intimated. At times, however, careful measurements of the temperature will show some fever in the chronic cases. Pain is a constant symptom, though it is variable in intensity. It may be due to a variety of causes, such as the alterations in the joints, neuritis, and rarely to involvement of the spinal roots in disease of the vertebræ. There is usually marked acceleration of the pulse-rate. This is considered by Spender and others to be a quite characteristic symptom. The pulse-rate usually increases with the progress of the disease and in the later stages it may reach a frequency of 120 and more per minute—and this without any discoverable lesion of the heart or blood-vessels. The pulse sometimes returns to its normal frequency, and this may be interpreted as a sign that the progress of the disease has been arrested. Commonly, however, the pulse remains rapid despite the evident arrest of the affection. In contrast to the pulse of gout and rheumatism, the pulse of arthritis deformans is usually fairly soft and compressible, unless, of course, there be arteriosclerosis, which is uncommon. Cutaneous pigmentation and various dystrophic alterations of the skin are quite generally met. Spender is especially impressed with the diagnostic importance of disseminated freckles, which he thinks occur in at least two-thirds of the cases. He believes their occurrence especially significant of early arthritis deformans. In addition, the skin is thin, glossy and of a pinkish hue, rarely of a bluish tint. There may also occur local sweatings of the forehead and extremities, which are usually cold; disturbances of nutrition, especially longitudinal striation of the nails; subcutaneous fibrous nodules and fibrinous exudates, especially in the neighborhood of the affected joints; enlargement of the lymphatic glands, especially those of the groin and axilla, as well as those in the neighborhood of the affected joints; edema of the legs; neuritis; anemia; purpuric hemorrhages; scleroderma; and rarely various disturbances of the abdominal and thoracic viscera. Affections of the endocardium and pericardium, though uncommon, do occur. This occurrence, long ago commented upon by Charcot, is especially insisted upon by Bannatyne and others. The Garrods, however, state that valvular lesions are not more common among those affected with arthritis deformans than among those not thus afflicted, and believe that when found in a patient affected with arthritis deformans they are to be attributed to a previous rheumatic infection. During the past winter, I had occasion to observe in the medical wards of the Hospital of the University of Pennsylvania, under the charge of Dr. Musser, a woman with well-marked arthritis deformans, who had a mitral stenosis.

The partial or monarthritic form of arthritic deformans affects chiefly old men, and its origin in many

cases seems to date from an injury. It is characterized by the slight tendency it manifests to spread, though the other joints do not enjoy complete immunity. At times there may be slight involvement of the opposite hip, or disease also of the spine or of a shoulder. The condition is often described as morbus coxæ senilis. Heberden's nodes is the name given to small nodosities that develop slowly on the lateral aspects of the distal phalanges. These are the result of osteophytic outgrowths at the articular surfaces of the bones, which present in addition the other alterations characteristic of arthritis deformans. They are sometimes found in persons otherwise unaffected with arthritis deformans, though they are also found in persons with the localized form of the disease in the hip, or the vertebræ. They are rarely if ever encountered in persons presenting the usual lesions of the disease in the hands and feet. Arthritis deformans as it occurs in children is much like the arthritis deformans of older people, but it presents in addition some peculiar and interesting features, the discussion of which is not pertinent at present.

DIFFERENTIAL DIAGNOSIS.

The recognition of arthritis deformans and its differentiation from other disorders that more or less closely resemble it, are matters of extreme importance. The diseases with which it is most likely to be confounded are, of course, rheumatism and gout. There can hardly be much question that many cases of arthritis deformans are incorrectly diagnosed either rheumatism or gout and that the true nature of the arthritis is not recognized until it has given rise to extreme and irremediable deformities. These three diseases—gout, rheumatism, and arthritis deformans—formerly held to be more or less related to each other, are now recognized as being totally distinct affections. The relation consists in a more or less superficial resemblance clinically, and in the fact that one disease may follow the other in the same patient.

As already stated, acute arthritis deformans most closely resembles acute rheumatism, and in many cases, in the early stages at least, differentiation is most difficult. The acute forms of arthritis deformans may be distinguished from acute rheumatism by the fact that the former is much the more intractable affection of the two; fever, when it develops in arthritis deformans, is less high and of shorter duration than that which attends rheumatism; arthritis deformans does not exhibit any especial tendency to flit from joint to joint—a joint once affected generally remains so, and other joints become involved; the affected joints are less red, and less painful than in rheumatism; in arthritis deformans the small joints are especially prone to be affected, the profuse sweats that accompany acute rheumatism are not present, though slight perspiration is common enough, the erythemas that accompany rheumatism are absent, there is less likelihood for the development of endocardial and pericardial complications—by some it is even denied that such are ever due to arthritis deformans or its cause—the abundant deposit of urates in the urine, so common in rheumatism, is usually absent and finally the disease does not respond well to treatment with salicylic acid and the salicylates. The same facts hold good with reference to the differential diagnosis in the more chronic cases and their acute exacerbations. In acute rheumatism the articular alterations subside without impairment of the functions of the joints, whereas if the disease be arthritis deformans, sooner or later, deformities make their appearance. There occur ankylosis, absorption of the articulating cartilages, eburnation and abrasion of the bones, lipping of the cartilages at their edges or the growth of new cartilage in the synovial sheaths, osteophyte formation, relaxation and softening of the ligaments, muscular contractures and dislocations. Chronic rheumatism, of course, does often localize itself in the joints, and even in the small joints of the hands, less frequently in those of the feet, but it never results in the deformities, lipping of the cartilages, osteophytic new-growths, etc., so characteristic of arthritis deformans. In rheumatism the enlargement of the joints is fusiform and regular, and the joints affected usually manifest some evidence of local inflammation. The deformities that occur are the result of disuse and alteration of the capsules and ligaments. The joint involvement is markedly asymmetric in its distribution and the temporo-maxillary joints and the vertebræ are rarely if ever implicated. The acute exacerbations, which are quite common, show rapid migration from one joint to another and they usually quickly subside under the influence of the salicylates. In arthritis deformans the muscular atrophy is also more early in its development and more rapid in its course than in rheumatism. In chronic rheumatism also we may elicit a history of previous attacks of articular involvement with intervals of complete intermission, or a history of previous chorea or erythema nodosum. Again, examination of the heart may reveal a valvular lesion. We must remember, however, that in young children arthritis deformans may manifest deviations from the typical course observed in older persons. It affects many joints in rapid succession and causes their great enlargement and well-marked muscular atrophy. The swelling is sometimes excessive and unaccompanied by the characteristic deformities—for a time at least. In children the disease is much more rapid in its course and more quickly destructive than in adults and elderly persons. in whom it is usually slower, but accompanied by well-marked deformities.

Spender considers that what he speaks of as the collateral symptoms of arthritis deformans are of considerable significance in the diagnosis. Thus he states that, examining a case of arthritis of doubtful nature, if we count the pulse, we may find a steady tachycardia of between 90 and 120 per minute; or there may be a growing melasma on the face, or perhaps numerous spots or little stains on the arms; or the hands may be cold and sweating; or there may be neuralgic twinges in the upper and lower limbs. He believes that if any one of these symptoms be present beyond question, and if it can be proved to have been synchronous with the arthritis in beginning and progress, the nature of the arthritis is demonstrated thereby. He states that he does not pretend to yet explain the connection of the facts, but only to record them.

There can be no question that many cases of arthritis deformans have been and still are mistaken for gout. This is a most unfortunate occurrence when we consider the indications for treatment, which are almost diametrically opposite in the two affections. Care and patience, however, will usually enable us to make a differential diagnosis. Arthritis deformans is pre-eminently a disease that affects women of the poorer classes, who have been exposed, as already intimated, to want and privation, prolonged fatigue, worry and anxiety, and to the inclemencies of the weather, or who have had disease of the genitalia. On the contrary, gout is a disease that especially affects men who are well-to-do, well nourished, who have not been exposed to depressing influences, but

who have enjoyed the good things of this life and are popularly known as good livers. The etiologic factors in arthritis deformans therefore are chiefly nervous; those of gout are chiefly dietetic. In gout there is usually a distinct hereditary tendency which is much less apparent in arthritis deformans. The nervous factors that play such an important rôle in the etiology of arthritis deformans, when they occur during the course of the disease, cause an aggravation of the symptoms; the same factors are without such influence in gout. In arthritis deformans the onset is usually slow and insidious, there is often but little pain or swelling at first, and the patient frequently does not feel impelled to seek the advice of the physician until the disease is more or less advanced. In gout, on the contrary the onset is usually sudden, there is considerable pain, swelling, heat, tenderness and infiltration of the soft tissues about the joint or joints affected. Arthritis deformans generally affects one of the small joints of one hand, then other joints of the hands, and finally it may spread to almost all the joints of the body, including the temporo-maxillary joint and the vertebræ, but it exhibits no especial predilection for the great toe; gout, on the other hand, generally commences in the great toe; as it spreads it tends to implicate the larger joints; it involves the fingers in the later stages only of the affection, if it does not leave them entirely unaffected; it practically never involves the temporo-maxillary joints, and but most exceptionally the vertebræ. The symmetric distribution of the lesions so commonly observed in arthritis deformans is, as a rule, entirely absent in gout. The characteristic deformities of the hands, such as the ulnar deflection, never develop in gout. The deformities that do occur in gout are due to tophaceous deposits—to the presence of sodium biurate—in the joints and the periarticular tissues. In arthritis deformans these deposits are never encountered unless gout has preceded or possibly followed the arthritis deformans; the deformities are due to destruction of the articulating surfaces of the bones, to lipping of the cartilages, and to osteophytic outgrowths. In gout chalky deposits are also found in the external ear and in other portions of the body; these are never observed in arthritis deformans. In gout, uric acid is usually found in excess in the blood and in the urine; this is not the case in arthritis deformans. Arthritis deformans is improved or the progress of the disease is at least stayed by a good, full, plentiful diet. Such is usually poison to a gouty patient; his condition is improved by a very abstemious and restricted diet. In fact, indulgence in certain articles of diet, such as the sugars and certain acids, and the drinking of certain alcoholic beverages, more particularly the malted beverages, are almost certain to provoke an acute paroxysm of gout. These attacks, which are quite characteristic of gout, are often of extreme violence, but there are often intervals of comparative or absolute freedom from suffering. Arthritis deformans is of long duration, progressive from the commencement, but there occur more or less acute exacerbations which, however, are never of the violence of those that characterize gout. Finally, complications, such as the arteriosclerosis and chronic nephritis which are so common in gout, are extremely uncommon in arthritis deformans.

Tuberculosis of the joints resembles in a superficial way arthritis deformans, but in tuberculosis there are rarely if ever so many joints implicated as in arthritis deformans, the course and origin of the affection is different, the characteristic deformities, the extreme muscular atrophy and the symmetric distribution of the lesions are not observed, and the diseased joints break down and permit of the recognition of the nature of the affection by an examination of the extruded material or of the joints themselves. Sciatica may be differentiated from the monarthritic variety of arthritis deformans localized to the hip by the presence of pain along the distribution of the sciatic nerve, and by the absence of rigidity and restriction of movement at the hip-joint. The joint lesions that accompany locomotor ataxia, syringomyelia, hemophilia and gonorrhea are diagnosticated primarily by the recognition of the underlying disease, as well as by other features, the narration of which at present would carry us beyond the justifiable limits of this communication. We must remember, though, that certain isolated cases of arthritis deformans run their course unattended by manifestations other than the joint lesions and the muscular atrophy.

PATHOGENESIS.

When we consider the pathogenesis of arthritis deformans we are immediately confronted by the fact that the disease not only presents characteristic joint lesions, but that it also exhibits lesions of the muscles and various trophic, vasomotor and constitutional symptoms that are no less a part of the disorder. It is because of the difficulty of adequately accounting for the varied manifestations of the disease that most of the theories heretofore propounded to explain its development have been found wanting. That theory that does not explain the disease in its entirety must be abandoned—at least modified or added to.

That the disease is allied to either rheumatism or gout is now no longer held by competent authorities. That rheumatism, and in some cases gout also, may precede the development of the arthritis deformans does not permit of much doubt. That arthritis deformans itself is a hybrid, the consequence of a mixture of gout and rheumatism, can no more be maintained than the fancy that it results from one or the other of these two affections. That it is the consequence of anemia, as has been held by Forsbrooke, or of wear and tear, as has been suggested by Lane, or of reflex action induced by some disease of the uterus or the viscera, as maintained by Ord, does not agree with the facts at hand. That anemia is present in most cases is true; that the result of wear and tear is particularly evident on the articulating surfaces of the bones after the disease has existed for some time is also true; but that the disease is the consequence of either one or the other of these conditions does not admit of proof and is negatived by many well-known facts. There remain but two theories that are at present at all worthy of our consideration in an attempt to fathom the nature of the disease. These are the neural or nervous theory and the infectious or bacterial theory. The former was propounded a number of years ago by the late J. K. Mitchell, of Philadelphia, and has been maintained by a number of distinguished clinicians ever since; the latter, or bacterial theory, is of much more recent date, and still lacks the endorsement of the great body of clinicians and investigators. It seems to me that in the present state of our knowledge neither theory is entirely without justifiable objection. I believe, though, that a germ of truth is to be found in each.

The principal reasons that have been adduced to support the neural theory are: 1. The nature of certain of the etiologic factors of the disease. These have already been referred to, and mention has been made of the etiologic relationship of worry, anxiety, emotional dis-

turbances, fright, undue fatigue, etc. 2. The occurrence of the disease at a time when, in many instances, nervous disturbances manifest themselves; that is, about the time of the menopause, or during the exhaustion following repeated pregnancies, prolonged lactation, etc. 3. The symmetry of the joint lesions. 4. The tendency of the disease to spread centripetally. 5. The association of various vasomotor and trophic disturbances. 6. The fact that similar joint disorders occur in the course of certain evident diseases of the nervous system. Those who from time to time have upheld the neural theory have not been in unison with regard to the nature of the nervous factors that originate the joint lesions and other manifestations of the affection. By some they have been ascribed to reflex action, and the reflex disturbances incidental to disease of the female genitalia and to the menopause have been pointed to in support of this supposition; by others, the disease has been held to be a trophoneurosis and in support thereof the various trophic and vasomotor disturbances have been instanced; by others the affection has been attributed to a peripheral neuritis, and it has been pointed out by such that there can be no question that peripheral neuritis has been found in some cases; by still others, the disorder has been held to be a spinal disease.

Including, however, for the time being, all the preceding under the generic heading of the neural theory, when we come to examine this critically, there are many points that it leaves obscure. For instance, in locomotor ataxia, syringomyelia, ataxia paraplegia and other nervous disorders associated with arthropathies, the latter are found in connection with some definite disease of the nervous system—with a disorder the lesions of which are readily recognized. In arthritis deformans no lesions of the nervous system have been found, with the exception of the isolated cases in which some peripheral neuritis has been detected, and the other rare cases reported by Folli, Klippel and Bannatyne. Folli had an opportunity to examine at necropsy four cases. Two of these were typical cases, and they revealed alterations in the anterior horns of the gray matter of the cord. In one case the lesions were merely atrophic, in the other they were both atrophic and degenerative. Bannatyne found degeneration and vacuolation of the ganglion cells of the anterior horns of the spinal cord in one case. These, however, are isolated observations; the nerve lesions are relatively inconspicuous; they have not been found with any regularity—with that regularity we should expect after so many years of observation, and they can not possibly be held answerable for the widespread destruction of the joints, the muscular atrophy and the other clinical features of the disease. When we assign the development of the disease to reflex action we must be immediately conscious of the exceptional status we accord the affection. There is in the entire domain of pathology no counterpart of such a destructive disease resulting from reflex action, and the viscera when examined reveal but most inconspicuous, if any, alterations. Usually attributed to morbid impulses originating in the female genitalia, it must be remembered that a certain percentage of the cases occur in males, and still another percentage in young girls, at an age when reflex impulses from the genitalia are generally supposed to be wanting. And again it must be borne in mind that the uterus is very largely under the domination of the sympathetic nervous system as contrasted with the cerebrospinal axis. With regard to the idea of its being a trophoneurosis, it may be stated that evidences of trophic and vasomotor disturbances are most conspicuous. In respect to the neural theory also we must remember that the disease sometimes arises in the absence of the depressing etiologic influences of nervous character; that it often, in fact usually, does not arise symmetrically, but first one joint is affected, then the corresponding joint of the opposite member, and ultimately the disorder becomes symmetric, and that in many instances the disease does not manifest any tendency whatever to spread centripetally. All these we should expect were the affection of purely nervous origin.

Let us now for a moment examine the infectious or bacterial theory. We find that Schüller first suggested the infectious nature of this disease. Since his original communication this phase of the subject has been investigated by a number of observers, of whom may be mentioned Schüller himself, Chauffard and Ramond, Bannatyne, Wohlmann and Blaxall and von Dungern and Schneider. Schüller found in the diseased joints a bacillus with polar staining, with cultures of which he was able to produce in the joints of animals lesions similar to those observed in man. Bannatyne, Wohlmann and Blaxall, examining the synovial fluid obtained by aspiration in twenty-five cases of arthritis deformans, obtained in twenty-four of the cases a minute bacillus which exhibited polar staining. They also detected the same bacillus in several pieces of synovial membrane obtained during aspiration, and in the cartilages, synovial membrane and periarticular tissues in a few sections. By microscopic examination, they found it also in the blood in several acute cases, but never so characteristically as to warrant them in diagnosing the disease from this alone. Inoculation experiments were unsatisfactory. Some joint lesions were produced in rabbits, but they were not of a definite character. This bacillus is probably identical with that discovered by Chauffard and Ramond. These authors were able to isolate what they termed a slender diplobacillus from the synovial fluid and from scrapings from enlarged glands in the neighborhood of the diseased joints in cases of arthritis deformans. The bacillus described by Schüller is probably a different organism from the two preceding, and Schüller himself in his latest communication, states that his bacillus is the cause of chronic villous polyarthritis—a disease that he sharply differentiates from arthritis deformans. The last-named disease he attributes to disturbances of metabolism. Von Dungern and Schneider examined the fluid taken from the knee and wrist joints during life and that taken from various joints and the gall-bladder after death, of a patient suffering with arthritis deformans. Microscopic examination of the fluid from the gall-bladder revealed a micro-organism, and cultures from the fluid from all the joints as well as that from the gall-bladder revealed the same bacterium. This was a small diplococcus that could not be identified with any of the known organisms, though it resembled the lanceolate bacillus. When injected into rabbits' knees it produced lesions identical with those found in the joints of the patient. The authors believe that an attack of acute rheumatism from which the patient suffered seventeen years prior to his death and eight years prior to the commencement of the manifestations of the arthritis deformans, predisposed his joints to the arthritis. The development of the chronic polyarthritic deformans is attributed to infection from a chronically inflamed gall-bladder.

Bannatyne, who is an ardent supporter of the infectious nature of arthritis deformans, urges the following in support of his contentions: 1. the frequency of the

occurrence of arthritis deformans as a sequel of other forms of known infective diseases; 2, its numerous nerve symptoms for which no adequate nerve lesions have been found; 3, the occurrence during its course of such complications as pneumonia, pleurisy, pericarditis, endocarditis, etc.; 4, its polyarthritic character; 5, its course and progress, and 6, the presence of enlarged glands proximal to an affected joint.

Personally, I am inclined to accord considerable importance to the results of the above cited bacteriologic investigations, and to the views enunciated by Bannatyne and concurred in by Luff and others. I believe, though, that Bannatyne and others, possibly in the enthusiasm of their discoveries, take a too restricted view of the subject, and forget, or at least overlook, the demonstrated significance of the neural element in the etiology of the disease. Were I to express my own opinion, based on my own limited observation and study, I would state that I believe arthritis deformans to be an infectious trophoneurosis, and I further believe that the facts at our command bear out this opinion.

I have already alluded to some of the shortcomings of the purely nervous theory, but I trust I have at the same time pointed out sufficiently clearly the importance of the neural element in the etiology of this disease. I have also indicated that the present state of our knowledge does not warrant us in assuming that the disease is of spinal origin—in fact, the information that we possess indicates that the disease is certainly not of spinal origin. I have also shown that it can not be considered the result of a peripheral neuritis—indeed, it is to be wondered that such a supposition could have been seriously entertained; nor are we warranted in supposing that it results in consequence of reflex action, the impulses being emitted from some viscera, particularly the female genitalia, the seat of real or fancied disease. Of the various phases, therefore, in which the neural theory has appeared from time to time, there remains the trophoneurotic, and it is of this nature I believe the neural element in the etiology of arthritis deformans to be.

If we endeavor to supply the defects in the purely neural theory by assuming that the disease is an infectious trophoneurosis, we have firm foundation from which to proceed in the fact that bacteria have been found in the diseased joints in a considerable number of cases by competent investigators and clinicians of wide experience. We know that arthritis occurs in the course of or following certain infectious diseases, such as tuberculosis, pyemia, gonorrhea, scarlet fever, typhoid fever and acute rheumatism. We know that in some of these infections there exists more of a predilection to joint involvement than in others, and we know also that any one of them may exist without joint implication. This is as true of rheumatism as it is of any of the other infections mentioned. There may occur rheumatic infection without involvement of the joints similarly as there may occur typhoid infection without intestinal lesions. Arthritis deformans sometimes occurs after certain infectious diseases, such as rheumatism, influenza, suppurative tonsillitis, diseases of the gastrointestinal tract, etc.—under conditions, therefore, that permit of the ready entrance into the body of bacteria. In certain of these infections the joints, though they may not become diseased, are yet subject to the irritative influences of the toxins circulating in the blood. It is not unnatural to suppose that in the condition of diminished resistance thus brought about the joints readily become the prey of the bacteria provocative of arthritis deformans. In many cases under the influence of the trophoneurotic etiologic element the joints become especially prone to disease; in other cases, such as the physical wear and tear to which certain joints have been subjected, that they readily succumb to the morbific agencies provocative of arthritis deformans. This is seen especially well exemplified in the involvement of certain joints that have been accustomed to perform an undue amount of work. Other joints in the same patient may remain entirely unaffected. Then again we are justified in assuming that the special bacteria concerned in the causation of arthritis deformans possess a selective tendency to involve the joints—just as other bacteria find a congenial soil in certain special tissues of the body and there proliferating give rise to their deleterious consequences.

The events subsequent to the invasion of a single joint by the bacteria are such as we should expect from our knowledge of infectious diseases in general. A single joint is at first involved; then, possibly under the influence of the nervous system, the corresponding joint of the opposite member becomes diseased. But sufficiently often several joints of one limb are implicated before the affection spreads to the opposite side of the body. Corresponding joints of the two sides of the body do not become simultaneously involved as we should expect were the disease of purely nervous origin. Indeed, in some cases, the affection is not at all symmetric; it is very irregular in the distribution of its joint lesions. It may rarely be distinctly one-sided. The supposition that the disease is of purely nervous genesis because the joint lesions spread centripetally is contradicted by the fact that sufficiently often the disease does not spread centripetally, but in a most irregular fashion.

The bacteria having lodged in the joint not only engender the local lesions, which have already been referred to in sufficient detail, but they also produce a toxin. This being absorbed into the circulation gives rise to the other symptoms of the disease. It is to the operations of the toxin that the fever, the anemia, the slight sweatings, the local asphyxias or erythemas, the mottling of the skin, the pigmentations, the alterations of the nails, the atrophic glossy skin, the scleroderma, the tachycardia, the purpuric hemorrhages, the muscular atrophy, etc., are to be attributed. It will be observed that practically all of what may be termed the secondary symptoms of the disease are due to derangement of the nervous system. As no definite lesions have been detected in the nervous system, though they have been diligently searched for, these derangments may, with good reason and from analogy, be ascribed to the action of a toxin. From what we have learned of the action of bacterial toxins, we are aware that they are capable of setting up not only structural alterations, but also disturbances of nutrition, the latter of which escape detection by the microscope, but may sometimes be studied by the physiologic or pathologic chemist. The nutritional alterations precede the structural, and reasoning from this point of view, it is not surprising that histologic alterations should have been absent from the spinal cords examined. Nor is it to be wondered at that a few observers, as has been mentioned, should have found slight changes in several cords. We are well aware that the action of a toxin, if prolonged, may lead to such alterations as have been detected. And the same may also ensue in case the toxin be of increased virulence. The neuritis found in some cases may also be ascribed to the same cause.

That the tachycardia is the result of the action of a toxin is attested by the fact that in some instances when the disease has been arrested—therefore, when the bacteria have ceased their activity—the pulse-rate returns to the normal. In most cases, however, the disease is steadily progressive, more and more toxin is constantly elaborated, and the tachycardia gradually becomes worse.

The muscular atrophy, so characteristic of the disease, has been the subject of much study on the part of clinicians and investigators, and various theories have been adduced to explain its occurrence. It has been said that this atrophy results from disuse of the joint or joints—it being well known that when joints are no longer used the muscular apparatus concerned in their previous functioning tend to progressive atrophy. This view is negatived by the fact that the muscular atrophy the result of disuse is much slower in its development and less well marked than is that characteristic of arthritis deformans; by the fact that it affects all the muscles of the limb; by the fact that the atrophy of arthritis deformans is out of all proportion to the atrophy observed in cases of disuse from causes other than arthritis deformans; by the fact that it exhibits marked selective tendencies, and by the fact that in the majority of cases the tendon reflexes are slightly increased. The idea that the muscular atrophy is due to central spinal causes can not be entertained in the absence of demonstrable spinal-cord lesions, nor can it be maintained that it is due to peripheral neuritis, as has been claimed by Pietres and Vaillard, in view of the exceptional occurrences of peripheral neuritis in this disease. All the facts at our command indicate that the atrophy is of a mixed nature. It resembles that found in association with other joint disorders in that it tends to affect the extensor muscles more than the flexors; it is therefore spoken of as reflex. But that it results largely from the action of a toxin is attested by many facts. In its marked selective tendency, Bannatyne sees a significant indication of its toxic origin. In support of this view he compares the atrophy of arthritis deformans with that the result of the operation of alcohol, in which the extensors, especially of the leg, are affected; with that of lead, which affects chiefly the extensors of the wrist and fingers, and with that of the diphtheria toxin, which exhibits a marked affinity for the muscles—and their nervous supply—of the pharynx and the internal muscles of the eye. He draws attention also to the fact that in some cases only the motor filaments of a nerve are affected, and he states that there is good reason for the supposition that even trophic and vasomotor filaments may be especially picked out. In the aforementioned instances there occurs a peripheral neuritis to account for the atrophy of the muscles; in arthritis deformans it is much more likely that the atrophy is the result of some central disturbance, some alteration of the nutrition of the cells in the anterior horns of the spinal cord. This view is supported by the fact that there is usually increased myotatic irritability and slightly increased reflexes—indications of an irritative lesion somewhere. In a few cases the reflexes are diminished and there may supervene also the reactions of degeneration. These cases usually reveal a peripheral neuritis, or there may be degeneration of the peripheral motor neuron.

In some cases doubtless the bacteria circulate in the blood. Evidence of this we find in the discovery by Bannatyne and Wohlmann of micro-organisms in the blood of patients affected with arthritis deformans, and in the detection by Chauffard and Ramond of bacteria in the lymph-glands to the proximal side of the affected joints. To this may also be attributed the enlargement of the lymph-glands, the enlargement of the spleen said to have been found by several clinicians, certain subcutaneous fibroid nodules which have sometimes been known to undergo central necrosis, and lesions of the endocardium and pericardium, the occurrence of which is admitted by a number of observers, though denied by others.

In arthritis deformans certain disturbances of metabolism have been found. These have consisted, on the one hand, in the detection by Schüller, of diminution in the lime-salts and the earthy phosphates in the urine, and on the other hand, in the detection by Bain of a diminution in the excretion of uric acid and phosphoric anhydrid, without disturbance of the normal relationship between the uric acid and the alloxur bases. Schüller, who, as has already been mentioned, differentiates sharply between chronic villous polyarthritis and arthritis deformans, attributes the latter disease to disturbances of metabolism. These are characterized by the diminished excretion of lime-salts in the urine and the deposition of such salts in the articulating extremities of the bones, and in the periarticular tissues about diseased joints. I prefer, for the present, however, to consider these conditions not the cause of arthritis deformans, but the consequence of the factors that induce the arthritis itself—a part of the disease, therefore.

Finally, that arthritis deformans is in great part an infectious disease, is indicated by the markedly infectious character of all the acute cases. In these cases probably the bacteria are of excessive virulence, and are capable of producing their deleterious effects unaided, or but slightly aided, by a neural etiologic fact. In the chronic cases, however, we have to deal with an infectious trophoneurosis. The trophoneurotic factors predispose the tissues to bacterial invasion. This accomplished, the subsequent manifestations are in part controlled by, and produced through, the operations of the nervous system.

This view with regard to the infectious trophoneurotic nature of arthritis deformans, of course, permits of much further elaboration, but enough has been said on this occasion. I trust, though my remarks may not have seemed conclusive and convincing, that they have at least been suggestive.

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SEPARATION OF THE RECTI ABDOMINIS MUSCLES AND STRETCHING OF THE LINEA ALBA.

UNNOTICED FACTORS IN THE PRODUCTION OF ABDOMINAL AND PELVIC DISTURBANCES IN WOMEN.

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Since the publication of Glénard's work on enteroptosis in 1885, in which attention was directed to displacement of the abdominal viscera as a cause of suffering, especially in the female sex, numerous observations have been made corroborative of many of the statements of the French writer. At the present time there is a consensus of opinion among prominent clinicians as to the importance of the subject, but the profession at large have given it very scant consideration. Investigations made by me during the last two years have convinced me that alterations in intra-abdominal pressure, associated with visceral displacements, are the chief source of trouble in many cases in which abnormal symptoms are considered as neuroses or as reflex disturbances due to some pelvic lesion. Much just criticism has been heaped on the gynecologist because of the marked prominence given by him to various minor pelvic conditions, such as endometritis, laceration of the cervix, catarrhal patches on the cervix, etc., as causes of suffering in women. Such criticism has greatly helped to do away with much of the meddlesome gynecologic practice of former years, but careful observations made by scientific workers in the department of women's diseases have led to the same end.

The nature of the normal relationships of the abdominal and pelvic contents and the methods by which they are altered is a somewhat complicated problem, involving a consideration of anatomic, physiologic and physical factors which are not yet thoroughly understood.

It is not my purpose to refer to these in detail, but rather to direct attention particularly to one factor, viz., the abdominal wall. This structure, composed of a variety of tissues, the most important of which are the fascial and muscular layers, normally exhibits a certain degree of tonicity helping to maintain the position of the trunk and to exert pressure on the abdominal contents. The latter function it shares with the diaphragm and pelvic floor.

The average specific gravity of the viscera and contents is very little more than that of water—the liver, for example, is about 1.05 sp. gr.—and it is customary to regard the visceral mass as a body of water, so far as the physics of the abdomen is concerned. This being the case, it is evident that the pressure at the surface is distributed at right angles to the latter in all directions.

In addition, the influence of the weight of the mass has to be considered. This varies according to the position of the individual. In the erect posture it causes a slight bulging of the lower part of the abdominal wall and the pelvic floor is slightly lowered. If the position be altered so that the pelvis is higher than the thorax, the bulging of the lower abdominal region and pelvic floor is lessened, while near the thorax the abdominal wall is pushed slightly forward.

Schwerdt has endeavored to calculate the intra-abdominal pressure experimentally. He measured it within the stomach in the erect posture by means of a water manometer and found it to be 11 cm. In the rectum it measured 39 cm. The difference of 28 cm. represents the weight of the viscera supported by the pelvic floor. The vertical distance between the diaphragm and the pelvic floor was 36 cm. and it was therefore evident that the pelvic floor did not sustain the whole weight of the viscera. At first sight it might appear that the difference of 8 cm. represented the support given to various viscera by their ligamentous attachments, and this might seem to be all the more probable when it is remembered that the specific gravity of the viscera is very little more than that of water. Were the comparison to free fluid absolutely correct, the water manometer placed in the rectum would register the weight of the whole column of 36 cm. of water.

Are we then to conclude that the difference of 8 cm. is due to ligamentous support of the viscera? Certainly not, because the stomach and intestines contain air and gases, and the specific gravity of the whole column extending from diaphragm to pelvic floor must, therefore, be less than that of water. Schwerdt calculates that the proportion of the weight of the viscera supported by the ligaments is one-eighth, but it is likely that this is too high an estimate and several workers think it doubtful if, under ordinary circumstances, the ligaments act as supports at all. Symington has shown that normally the suspensory ligament of the liver is not tense, and Buist points out that this organ, whose greatest vertical diameter is 8 cm., must easily be supported by the subjacent viscera, since Schwerdt's experiment shows that the manometer registers in the stomach a pressure of 11 cm. So it is with the intestines. There is no proof that, under normal conditions, their mesenteric attachments act as constant supports or are ever meant to be such. Their structure is not of the consistence to make them efficacious for this purpose. Indeed, whenever pathological conditions are introduced which put continued strain on the ligaments they always prove to be unfit for the work thrown upon them and undergo gradual elongation. This being the case, it is evident that the important factor in sustaining the viscera in their normal relationships is the strength of the abdominal wall and pelvic floor.

Normally, there are variations in the intra-abdominal pressure, depending on different conditions, mainly on the state of fascial and muscular structures in the parietes. The stronger these tissues the more the resistance offered to the pressure of the viscera and the better the latter are supported.

The importance of the pelvic floor has long been recognized. The various hernial developments associated with weakness or laceration of different parts of its structure have been well investigated and many measures have been devised by gynecologists for the relief of the symptoms accompanying these conditions.

The other factor, the abdominal wall, has received very little attention. Several writers, Prochnowik, Landau, Tuffier, Fritz and others have referred to it, but their writings have received little notice. Recently, Wolkow and Delitzin have drawn attention to the importance of the abdominal wall, anatomically and physiologically, in giving support to the abdominal viscera. They have experimented on the cadaver, weakening the wall, by removal of one or the other of its component parts, and thus bringing about descent of various viscera.

There is a difference of opinion as to the relative values of the fascial and muscular structures. Stanmore Bishop, for instance, urges the prime importance of the fasciæ, and speaking of the anterior part of the wall, he states that the recti muscles are of compar-

atively little value as a source of strength. From the experiments of Wolkow and Delitizin, however, it would appear that these muscles are of considerable importance, their removal being followed by a stretching of the linea alba and a bulging due to descent of the viscera.

When one considers the effect of certain physical exercises in strengthening and thickening the abdominal wall it is easy to understand the importance of the musculature.

Weakness of the abdominal wall following muscular atrophy from dress-pressure and disuse is an additional corroboration.

The effects of local weakness in the abdominal wall have been fully described in surgical works under the various forms of hernia. General weakness of the wall has been known as "lax abdominal wall" and "pendulous belly," but there has been no detailed study of the latter conditions.

From my investigations I am convinced that in women general laxity or weakness is a very rare condition and that what is described as such is, in the main, a local disturbance consisting in separation of the recti muscles and stretching of the linea alba. My observations prove that these alterations, in moderate degree, are very frequent, are important causes of ill-health in women and are to a considerable extent amenable to treatment. So far as I am aware, their significance is, in the practice of medicine, generally overlooked, Many variations are found in the extent to which they are developed. In the least marked cases they are recognizable usually only in the region of the umbilicus. In more marked stages the area affected may extend an inch or more above the navel and a similar distance below, though rarely the part above or that below may be affected. In the most advanced conditions the diastasis extends from the pubes to near the ensiform cartilage.

The more marked the case the more thinned is the linea alba; sometimes, it is so stretched that it is impossible to dissect any extensive portion of it as a distinct layer. The fact that the stretching in its earliest stages is generally found at the umbilicus is evidence that this point is the weakest in the middle line of the abdominal wall.

As a result of stretching of the linea alba separation of the recti muscles takes place. In extreme degrees of the affection, the recti may be separated in the middle region of the belly as much as five or six inches, the intervening portion of the wall being bulged by the enteroptosed viscera.

In the past two years, I have not examined a single case of pendulous belly in which these conditions were not present. In no instance was there any general stretching of the abdominal wall, unaccompanied by marked separation of the recti muscles.

Etiology.—In almost all cases the diastasis is found in women who have born children. The most marked examples occur in those who have gone through several labors, though they may be found in those who have had only one or two children. Indeed, the examination of the abdomen of primigravidæ in a large number of maternity cases has convinced me that in the great majority of women there is some degree of separation of the recti in the region of the navel as a result of the distension of pregnancy. After labor, in many instances, however, owing to retractility of the abdominal wall, all evidence of stretching may disappear, though in a considerable proportion of cases, permanent widening remains, which is likely to become increased in succeeding pregnancies.

All conditions increasing intra-abdominal pressure in pregnancy tend to favor the development of the diastasis. Thus, women who work hard in the second half of pregnancy, especially those who lift or carry heavy weights, are more apt to become affected. Sometimes a sudden strain or fall is the starting-point of the condition. Among all classes, the wearing of corsets in pregnancy is not infrequently an important associated cause. It is very easy to understand how this should

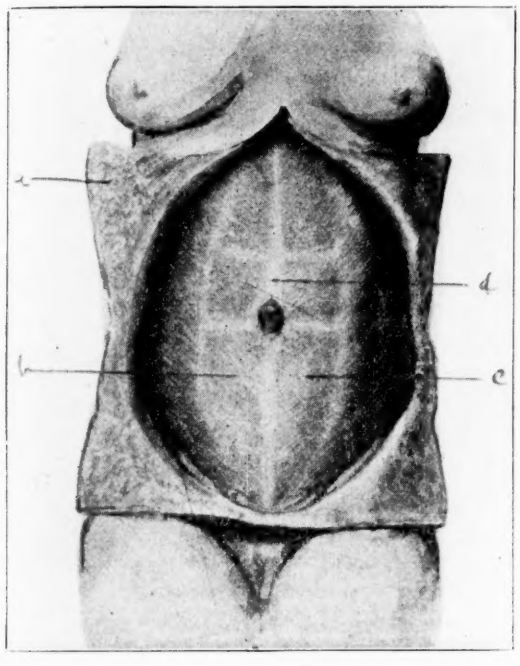

Fig. 1.—Dissection of anterior abdominal wall in a nullipara. The normal relationships are shown. a. Skin turned aside; b, c, recti abdominis muscles seen through their anterior sheath layers; d, linea alba.

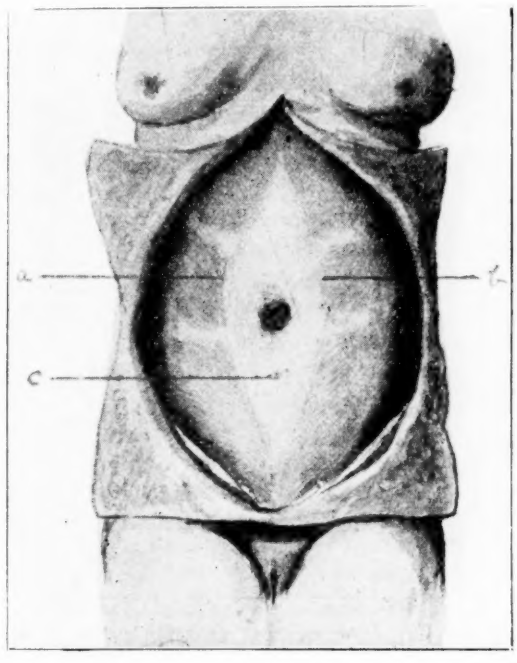

Fig. 2.—Dissection of anterior abdominal wall in a multipara, with diastasis of the recti muscles. a. Inner edge of right rectus; b. Inner edge of left rectus; c. Linea alba stretched and thinned.

act detrimentally. The intra-abdominal space being artificially constricted above and being gradually encroached on by the growing uterus from below, the various viscera are more and more compressed into the intermediate area, where the weakest and least resistant portion of the abdominal wall is at the umbilicus. In all women, flatulence and constipation, abundant adipose tissue in the mesentery and omentum must be regarded as favoring causes. So also is any condition which induces excessive coughing in pregnancy. General weakness or emaciation also predisposes, by lowering the tone of the tissues of the abdominal wall.

Of equal and perhaps greater importance is the effect of these conditions after delivery. In this period perhaps the two most important factors concerned are tight-lacing in one class of women and too-early hard work in another. A certain degree of diastasis having been established as a result of pregnancy, it

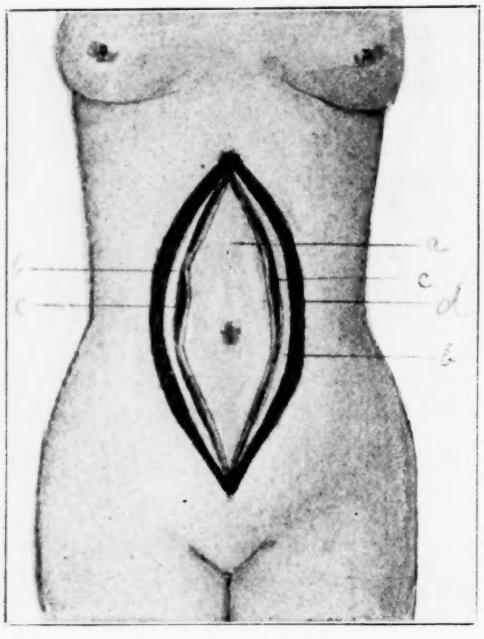

Fig. 3.—Operation for repair of weakened abdominal wall. The drawing represents the inner edges of the separated recti muscles exposed. a. Stretched and thinned linea alba. b. Anterior layer of sheath of rectus. c. Edge of rectus muscle exposed by opening sheath. d. Skin and subcutaneous tissue.

is easy to understand how increased intra-abdominal pressure resumed after labor may lead to a continuance or intensification of the pre-parturient weakness.

In nulliparous women slight degrees of stretching of the linea alba are occasionally found, marked degrees rarely. I have never met with an extreme case.

It is thus evident that of all the factors which may be associated with the development of this condition in women, pregnancy is the most important. Occasionally, cases are found in which the chief cause is distension due to tumors or ascites.

Results.—The inevitable result of marked or continued stretching of the linea alba is enteroptosis. This is met with in different forms and degrees, considerable variations existing as regards the order and range of descent of the viscera.

In cases in which the diastasis is only slightly or moderately developed, the variations are most marked. These, I believe, depend largely on the mode of life and dress. Thus, in some cases, no descent of any of the viscera can be made out. These are almost always

women who have not been accustomed to wear corsets, tie the skirts tightly around the waist or engage in heavy or vigorous exercise. In those women with slight or moderate diastasis, whose mode of dress or work leads to increased intra-abdominal pressure, the visceral displacement most frequently found is prolapse of the right kidney. In such cases it is very difficult to estimate the frequency of descent of other viscera, especially the hollow ones, by physical examination of the abdomen.

In a number of cases in which I have performed abdominal section for pelvic troubles I have found the transverse colon and, sometimes, the stomach, lower than normal, whereas by external examination I had been previously able only to distinguish prolapse of the right kidney.

Where marked stretching of the linea alba takes place, descent of the viscera and elongation of their attachments occur. In the most extreme degrees the

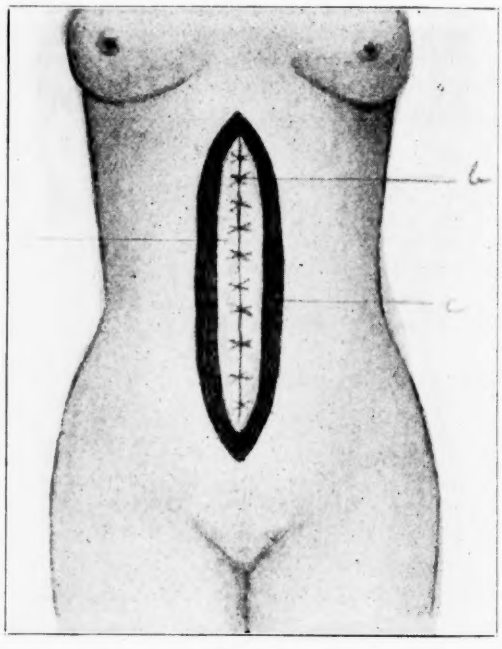

Fig. 4.—Operation for repair of weakened abdominal wall. The drawing represents the recti muscles with the fascia covering them drawn together and sutured by strong linen. a. Fascia forming anterior sheath layer of rectus. b. Line of junction of the muscles and sheaths. c. Skin and subcutaneous tissue.

belly is very protuberant and pendulous, the projecting portion being filled with small intestines, omentum, transverse colon and, sometimes, the stomach. Great variations are found as regards the extent to which the viscera are prolapsed. Alterations in the shape and position of the liver are probably, as Hertz has shown, chiefly related to the influence of corset-constriction.

Downward displacement of the right kidney is frequently found, the left organ being much less often affected, and to a less degree. The spleen is occasionally dislocated.

The abdominal wall between the recti usually becomes thinned. The recti themselves are pushed laterally as the linea alba is stretched and extend in a curved line from sternum to pubes, the convexity reaching well out into the lumbar region.

Prolapse of one or other part of the pelvic floor is frequently met with. This is mostly found where the floor has been injured in labor. It is very easy to understand why this complication should be brought about as a result of enteroptosis. Retroversion of the

uterus, with or without prolapse of the floor is also often found.

Symptoms.—The symptoms vary greatly. They are those which have been described in recent literature in connection with enteroptosis. In severe cases the patient may complain of weakness and dragging in the back and abdomen, aggravated on long standing, walking or working. The bowels are usually sluggish. Pains may be felt in the iliac, lumbar or other regions. Various dyspeptic symptoms may be present. Pulsation of the aorta may disturb the patient. Nausea and vomiting may be distressing. The patient often loses weight and a neurasthenic state is frequently induced. Not even in the most marked cases are these symptoms always present. Often some are absent and, in many instances, one complaint is prominent above all others.

When the linea alba is not much stretched, there may or may not be symptoms. In this class they are very rarely absent, in some degree, in those who constrict the abdomen by their dress, stand long or engage in heavy work. Frequently in such cases the chief cause of distress is marked downward displacement of the kidney. Patients of a nervous temperament are most easily affected. Of all the symptoms those which I have found most constant are weakness and dragging in the abdomen and back, aggravated by long standing or exertion.

Fig. 5.—Patient (Mrs. D.) with marked separation of the recti. The photograph represents the marked bulging between the recti as the head and chest are raised from the table, the abdominal muscles being thus made to contract.

Diagnosis.—The diagnosis of diastasis of the recti is easy. The patient should be made to lie flat on her back and the abdomen palpated in the following manner: The physician places the finger tips of his right hand on the middle line of the abdomen near the navel. His left hand grasps the patient's hands and she is asked to raise her head and chest somewhat from the table, in order to contract the recti muscles. As the muscles shorten they tend to approach the middle line. In this way the physician gauges the extent of their separation, thus determining the degree to which the linea alba is stretched.

In many cases in which the condition is marked this procedure is not necessary. As the patient lies relaxed, the edge of the separated muscles may be easily palpated. The vertebræ may be felt with great ease, especially in thin women, and pulsation of the aorta is often visible.

Often a distinct groove may be noticed along the middle line of the abdomen, and when the patient contracts the abdominal muscles this part of the wall bulges forward. Frequently, palpation between the recti causes a feeling of soreness which the patient states to be similar to that which she feels while walking or working.

In the most extreme cases in which the recti muscles are pushed far out, palpation of the lumbar regions may lead the physician to think that he is feeling a prolapsed kidney or some other swelling. In my clinic this error is frequently made by students. The mass which is felt is mainly made up of an abnormally-placed rectus muscle.

In extreme cases associated with great descent of the intestines the lower portion of the abdomen bulges markedly when the patient sits or stands.

Treatment.—In every case the patient should be advised to give up the corset and suspend the skirts from a loose waist or from the shoulders. This procedure is sufficient to relieve all symptoms in many cases in which the trouble is not very marked, even though there be considerable displacement of the right kidney. When there has been atrophy of muscles constricted by the corset and tight skirt bands, a course of massage to improve the affected parts should be recommended. This may be profitably combined with moderate gymnastic exercises calculated to bring these muscles into action.

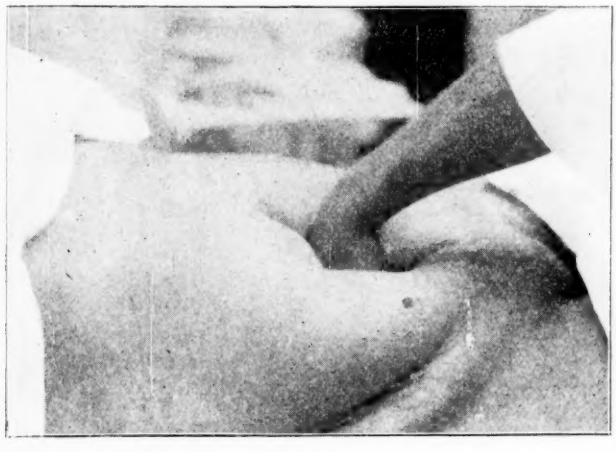

Fig. 6.—Patient (Mrs. D.) with marked separation of the recti. The photograph is taken as the upper part of the body is being raised from the table. The physician's fist is buried in the gap between the muscles, which are contracting. In this case there was pronounced pendulous belly. As the patient lay relaxed on her back, the distance between the muscles at the level of the umbilicus measured 5½ inches.

In marked cases the above treatment may often give some degree of relief as long as the woman avoids every form of exertion tending to increase the intra-abdominal pressure. But as it is impossible to be assured of this avoidance in the majority of women, it is best to have recourse to other measures.

First, the patient may, in addition to the adjustment of her clothing as above described, wear continually a broad silk-elastic abdominal binder. Such a mechanical substitute for the normal abdominal wall, by supporting the viscera, often gives great relief.

This method of treatment is open to the following objections: The binder must be worn continually, resulting inevitably in atrophy and weakening of many of the trunk muscles. It is often unpleasant to the wearer, especially in hot weather. It has to be renewed at intervals of a few months, a serious consideration for a poor woman. It is least effective and most

quickly gets worn when the patient engages in daily work.

For these reasons I have introduced the following surgical procedure as a means of restoring the abdominal wall to a more satisfactory condition.

An incision is made in the middle line of the abdomen, dividing the skin and subcutaneous fat until the linea alba is reached. Its length varies according to the extent of the separation of the recti. In very bad cases it may extend from the symphysis nearly to the ensiform cartilage. The umbilicus should be entirely removed if it be deep and difficult to clean thoroughly. Otherwise the mesial incision may be carried on one side of it. When the linea alba is exposed the skin and fat should be dissected off the fascia on both sides of the middle line, until the edge of each rectus is reached. The sheath of each muscle should then be entered at its inner border, near the lower angle of the wound, and this incision should be carried along the edge of the muscle as far as is necessary, the anterior layer of the sheath being divided where it becomes the stretched linea alba. The muscles are then loosened from their internal attachments to the sheath. A series of sutures are then passed from side to side through each muscle and its corresponding anterior sheath-layer. When these are tied the muscles lie in

Fig. 7.—Abdomen of patient (Mrs. D.) after operative repair. The wall is considerably reduced in size and the bulging much less prominent.

apposition close to the middle line covered by the fascia. As suture material, I have always used strong linen prepared by a modification of Gubaroff's method. It is left permanently buried. Careful apposition of the fascial edges may be made by catgut. The edges of the incision through the skin and superficial fascia and fat are then closed.

This is often followed by a bulging of the skin along the line of the incision in cases in which separation of the recti has been very marked, and is an evidence of the reduction in size of the abdominal wall due to approximation of the muscles. Owing to retraction in the tissues the bulging of the skin afterward disappears. In marked cases I have removed a strip of skin and fat from each edge of the wound before closure, in order to diminish the bulging.

This operation was first performed by me in November, 1898, in the Royal Victoria Hospital, Montreal. Since that date I have performed it in 51 cases. The results have been most satisfactory. In only two instances was there any trouble with the stitches from infection. These were slight, only a small extent of the healed area being affected.

In nearly every case there was more or less downward displacement of the kidney. In less than 8 per cent. of these, where the organ descended very low I performed nephrorrhaphy. In 55 per cent. of the cases retroversion or prolapse of the uterus was present and was treated by operative measures.

The operation has always been followed by improvement; in most cases by complete cure. Some patients who had been much run down and neurasthenic generally recovered health very slowly.

In several women in whom the right kidney was considerably dislocated, nephrorrhaphy was not carried out, in order that the repair of the abdominal wall might be tested as to its value in supporting the viscera. I asked all of these to write to me if symptoms developed which might possibly be connected with the kidney. Only one has communicated with me, complaining of some dragging in the back, and she has desired to have the right kidney fixed by operation.

I urge all who undergo this operation to abandon corsets and support their skirts from shoulders. Particularly are they enjoined to avoid all severe or sudden exertion for at least six months. During the early weeks of convalescence daily massage of the abdominal parietes is advisable. Afterward, light gymnastic exercises, calculated to improve the abdominal muscles, may be carried out.

In cases where the enteroptosis has been marked, the patient should wear a broad silk-elastic binder for six or eight months after operation.

Cocainization of the Nerve Trunk as a Means of Surgical Anesthesia.—Instead of anesthetising the entire lower part of the body as in medullary narcosis, Jaboulay proposes to cocainize merely the nerve trunk innervating the region to be operated on. The *Semaine Méd. of* November 14 states that he has successfully applied this method in a scapulo-humeral disarticulation in which septicemia prevented the employment of general anesthesia. After local anesthesia of the soft parts an incision was made for the ligature of the subclavian artery. The nerve plexus and the artery were denuded at the same time and after the ligature had been applied, a few drops of a 2.5 per cent. solution of cocain were injected into the two principal branches of the brachial plexus. As soon as the upper portion of the arm had become insensible, the disarticulation of the shoulder was accomplished without pain. The patient merely experienced a shock when the inner portion of the flap was cut in the domain of the intercostal nerves. Anesthesia of the upper members is particularly favorable by this method, but Jaboulay thinks it is equally applicable to the lower members and to other regions, such as the territory of the trigeminus for example.

Physical Signs of Pleuritic Effusions.—The *Semaine Méd.* of October 10, mentions among the other signs of effusion described by A. Pitres in his recent works, the increased frequency of the respiratory movements, which is, however, by no means proportional to the amount of the effusion. The type of the breathing was superior costal in 42 per cent. of his cases and mixed in 51 per cent. The normal type was only observed when the effusion was less than a liter in amount. Dulness over Traube's space is occasionally observed in healthy persons who have never had pleurisy, and consequently is not a sign of the affection. The wooden sound produced by percussion of a sound lung is very faint if there are nodules. The sound is brassy in case of a gaseous effusion, but clear and silvery directly over a fluid effusion in the pleural cavity, unless it is masked by a tumor or old adhesions. He always attaches a manometer to his aspirating apparatus and stops when the negative pressure reaches 20 m.. of the mercury column. The amount of fluid withdrawn is of less importance than the difference in the intrapleural pressure from removal of the fluid.

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SHALL THE CONCEPTION OF INFLAMMATION BE ABANDONED?

Andrew H. Smith discusses the question whether it is advantageous to recognize the existence of inflammation as an intermediate process. Would it not be gainful, he asks, if a more direct interaction between the morbific agent and the reparatory effort was admitted. He points out that the conception of inflammation as an intermediate process is incorrect and in reality confusing. "If we inject sterilized oil of turpentin into the cellular tissues the place becomes red, hot, swollen and painful, not because it is the seat of "inflammation," but because it is the seat of so and so many drops of oleum terebinthinæ." It is claimed that in the textbooks inflammation may be defined correctly enough, but it is treated as systematically and exhaustively as many real pathologic and nosologic entities, the etiology, symptoms, progress and treatment being duly set forth. It is contended that as long as inflammation is conceived as the disease or "as the dominant process in disease" it may tend to obscure the exact relationship between the cause and the effect. An exhaustive, unprejudiced study of the various forms of noxæ on the one hand and the reactive and the reparative changes in all the various tissues on the other hand, would leave no room for "inflammation," because the phenomena currently designated as inflammatory would have received proper consideration in connection with each morbific agent. Smith consequently proposes that the entire doctrine of "inflammation," as well as the designation "itis" should be abandoned.

We are confronted at once with the question of nomenclature. With *tuberculosis* as a precedent, the action of other organisms, according to Smith, may be expressed by such terms as *streptocosis, staphylocosis, gonocosis,* etc. An undetermined infection would be *microbosis* or *bacteriosis*. In the same way *pericardiosis* would signify infection of the pericardium, *pericardial pneumocosis,* pneumococcus infection, etc. For other inflammations not necessarily infective the words *traumosis* and *toxosis* are suggested; *fibrosis* and *cirrhosis* are terms already in use for the designation of chronic tissue changes often classed as of inflammatory nature. Should this new nomenclature gain general acceptance, we would have good reason to expect some interesting developments in the coinage of new terms by the dermatologists, who so far seem to be the most fertile nomenclators. All efforts toward greater exactness in medical science are deserving of encouragement. Whether the substitution of certain names for terms now in use, as *pericardial pneumocosis* for *pneumococcus pericarditis,* would materially advance matters may be questioned, however. But that great advantage is derived from an exact nomenclature, in which the etiologic factors are given as prominent a place as possible, can not be disputed. This is quite feasible with the help of the old terminology. The fact remains that the reactions to injuries of various kinds and the process of repair have so many and such essential characteristics in common that in the present state of our knowledge it is of great importance to be able to study these phenomena from a general standpoint, as is now done under the heading of inflammation.

That the use of the word "inflammation" and of the ending "itis" should be allowed to obscure the etiologic relationship and to lead to the establishment of faulty therapeutic principles, depends on an imperfect and erroneous conception of the true nature of the inflammatory changes. To ignore the causes underlying such important manifestations as the various inflammatory processes and diseases would be a step backward indeed. At the same time, as successful treatment must be directed against the various bacterial and other causes of inflammations, it is to be borne in mind that at certain times and places inflammatory changes are so poorly controlled as to require immediate intervention by the physician, regardless of the cause at work, as, for instance, in occlusion of the entrance to the larynx from exudation into the surrounding tissues, in the excessive accumulations of fluids in the pleural and other cavities, etc. Inflammation is not always our friend, as suggested by Smith, but may become directly dangerous. Hence the necessity for occasionally "treating inflammation" as such, so as to gain time for attacking the fundamental cause at work.

BACTERICIDAL ACTION AND OSMOTIC DISTURBANCES.

Alfred Fischer,[1] professor of botany in Leipzig, has studied the action of different kinds of serums and other fluids on the bacterial cell, in order to throw more light on the nature of the bactericidal effects of serums. Heretofore the theory of the bactericidal action of serums almost universally adopted is Buchner's alexin theory, which explains the bacterial destruction as caused by digestive ferments. In fact, alexin—or protective body—is held to be a proteolytic enzyme.

Baumgarten and his pupils, however, have rather persistently opposed Buchner's theory, claiming that much of the bactericidal action is due simply to disturbances of nutrition, and of osmosis in the bacterial cells placed in serums of varying composition outside of the body. Alfred Fischer also shows that the sensitiveness of bacterial cells to osmotic disturbances induced by sudden changes in the concentration of the

1. Zeitschr. f. Hyg. u. Infektionskr., 1900, xxxv, 1-55.

fluids has not been taken into proper account in the studies of bactericidal agents. He shows that the well-known Pfeiffer phenomenon—disintegration and transformation into balls of comma bacilli when introduced into the peritoneal cavity of immune animals—is the result of osmotic disturbances, the increased pressure within the bacterial cell forcing the protoplasm out in the form of small balls. This phenomenon Fischer calls *plasmoptysis,* in contradistinction to *plasmolysis,* in which the protoplasm is separated from the cell membrane and broken up into small masses. Plasmoptysis occurs in the case of many bacteria when placed in various serums; it also occurs on transferring bacteria to salt solutions of greater concentration than the ordinary media, and from salt solutions to water, bouillon and other fluids of less concentration. The presence of nutritive substances in some of the solutions used was found to delay the deleterious effect of osmotic disturbances. In plasmoptysis the wall of the bacterial cell bursts and the contents are forced out; in flagellated bacteria this occurs at the points of departure of the flagella, because of the weakness of the wall at those places. Death undoubtedly occurs after plasmoptysis, especially if the fluids are poor in nutritive substances. Most serums are of poor nutritive quality and of greater concentration than the ordinary bouillon, hence osmotic disturbances have not been excluded in the earlier studies of so-called bactericidal serums. Without entering into further details, suffice it to say that new evidence is necessary to establish the truth of the alexin theory, and in the experiments undertaken for that purpose osmotic disturbances of all kinds must be excluded rigidly. If bacteria are destroyed by digestive ferments in serums, evidences of digestive transformation ought to be demonstrable chemically; so far this has not been done.

While Baumgarten and his students would explain the bactericidal action of serums outside of the body as the result of osmotic and nutritive disturbances, Meltzer[2] suggests that similar disturbances may take place in bacteria that have gained entrance into the body, which is thus protected from the dangers of the infection. Perhaps some of the diplococcoid and other forms of the colon bacilli described by Adami and his pupils are explainable on the score of osmotic changes.

THE INDISCRIMINATE USE OF ALCOHOL.

There has been much warm discussion and comparatively little demonstration bearing on the question whether alcohol is a food or a poison, and we are inclined to the intermediate view taken by Dr. H. S. Anders in THE JOURNAL a short time ago, that it may be either or neither in accordance with the purposes for which it is used, the dosage and the frequency with which it is administered and the susceptibility of the particular individual. In these respects alcohol agrees with numerous other substances of the materia medica, which are equally capable of good and of evil according to varying circumstances.

It must be admitted that the question of custom is not without influence in this connection. Thus the use of opium in India, of arsenic in Styria, of alcohol, tobacco, tea and coffee throughout the civilized world, has apparently stamped these with a certain food-value, however limited, but it surely will not be contended that any of them is necessary to life or health, except of course, as they may be needed for therapeutic purposes. Now, in so far as these substances are incapable of harm the physician and the hygienist may be somewhat indifferent to their indiscriminate employment, except that here again moderation must be counseled, as in all other things, for extremes in practices, of themselves healthful, are likely to be injurious. Therefore, with regard to the use of alcohol the evidence should be weighed judiciously and a decision reached in accordance with the conclusion whether the greatest good is to be secured by sanctioning and indulging in its unrestrained, or even its limited, use, or by forbidding altogether its employment except for therapeutic purposes.

A most interesting contribution to this subject is made by the distinguished alienist, Professor Forel,[1] who relates that, having been brought up in the midst of a country of vineyards, he became accustomed from childhood to the daily use of wine. In adolescence he suffered from disorders of digestion, especially cardialgia and headache; but it was not until he became director of the Burghölzli Hospital for the Insane, and professor of psychiatry at Zurich, that he realized the necessity for total abstinence personally and the application of the same principle to the patients under his care, so many of whom owed their illness and their tendency to relapse to alcoholic intoxication. The results that followed this departure amply confirmed the wisdom of its institution, permanent cure being effected in a considerable proportion of cases in which previously relapse had been the rule.

Forel goes on to point out that in all countries where the alcohol-habit prevails it accounts for from one-half to three-quarters of the crimes, a large proportion of the suicides, of cases of mental disorder, of deaths, of diseases generally, of poverty, of vulgar depravity, of sexual excesses and venereal diseases, and of dissolution of families. One of the worst features however is the hereditary one, a larger proportion of the children of alcoholics being idiotic, epileptic, neurotic, alcoholic, degenerate and deformed than the children of healthy parentage. These results, it may be contended, are due to the excessive or long-continued indulgence in alcohol, but this is a question of individual tolerance and susceptibility, and it is scarcely possible to fix on any definite demarcation between moderation and excess.

2. Trans. Cong. Am. Phys. and Surg., 1900, v, 12 25.

1. American Journal of Insanity, lvii, No. 2, p. 297.

The only safeguard, therefore, would appear to reside in total abstinence, and Forel contends that the physician who is not a total abstainer can not enforce such abstinence on the part of his patients.

IRRITABLE BREAST.

The breast is a compound tubular gland whose function is only periodically called into activity. A few drops of milk, however, may occasionally be found present at birth and at puberty, and it is said that the application of a child to the breast quite independently of pregnancy may excite the secretion of milk. Accumulation of milk in an acinus whose secretory duct has become occluded or otherwise obstructed, gives rise to a cyst, or galactocele. The breast is further peculiarly susceptible to disease as a result of infection during the period of nursing, and is frequently the seat of hyperplasias or new-growths, benign and malignant. Hypertrophy of the mammary glands is a physiologic manifestation of pregnancy, continuing throughout the period of lactation. Adenoma, fibroma and carcinoma are common forms of new-growths in the breast.

In a communication presented at a recent meeting of the Boston Society for Medical Improvement, Dr. R. C. Cabot[1] reported a condition in two spare, pale, neurotic, unmarried young women, attended with the presence of a tender and painful lump in the upper outer quadrant of one breast. In one case the lump was about the size of a large horse-chestnut, and in the other a little larger. In both it was flattened from before backward, and it was felt with greater difficulty when the breast was pressed against the thorax than when it was grasped in the fingers from side to side. In one case the axillary glands were not affected, while in the other they were slightly enlarged and somewhat tender. There was no retraction of the nipple and the tumor was freely movable beneath the skin, and not accurately circumscribed. In each case the tumor diminished in size, while another appeared in the opposite breast. Marked improvement followed general treatment.

The condition agrees with the descriptions of irritable breast, but its nature and pathology are obscure. It has been thought to be of inflammatory origin, but Cabot suggests the possibility of its being a galactocele. The question of prognosis is rendered somewhat uncertain by the fact that some observers believe that carcinomatous transformation may take place. If this belief is well founded surgical removal would be justified; but, on the other hand, the tumors have often been reported to disappear in the sequence of local applications and improvement in the general condition. In the discussion it was pointed out that the disorder is observed especially at two periods of life, namely, that of adolescence and that of the menopause. It appears, likewise, to be related in some way with disease of the uterus and its appendages, or with menstrual irregularities; and relief can sometimes be afforded by abstraction from the uterus of two or three ounces of blood, repeated several times at intervals of a month. Good results have been attributed in some instances to the application of galvinism—from 15 to 20 milliamperes for ten or fifteen minutes twice a week. In some cases that have been operated on a diffuse fibroid condition of a portion of the breast has been found, with secondary retention-cysts. When the breasts are large and pendulous, support and slight pressure have yielded beneficial results. Massage also may prove serviceable.

1. Boston Medical and Surgical Journal, Nov. 29, 1900, p. 555. See Abstract Dec. 15, p. 1583.

"A COMPLICATION OF DOCTORS."

"Death from bowel trouble and a complication of doctors," was the verdict of a coroner's jury in a recent case in Aurora, Ill. It appears that six physicians were called in at different times, and several more were sent for, but failed to come, most of them without any knowledge of the services of the others. The patient's condition was apparently not considered dangerous until toward the last, and it is quite possible that it suddenly took a serious turn. There was probably no glaring error in diagnosis on the part of any one of those who were called and who, it may be reasonably presumed, did only what might safely be done for such a case as apparently existed. The verdict therefore is a rather gratuitous insult to the medical profession, and was probably intended as such. It, however, points a moral, which is generally applicable, namely, the necessity of full inquiry into the most trivial case, and the possibility that such a case may, however slight its apparent importance, take a more serious aspect. Another moral illustrated by this case is the danger of calling one physician after another in the way here practiced. It does not appear, however, that this point was appreciated by the jury or intended to be noticed by them in their peculiar verdict.

PARASITIC HEMOPTYSIS.

In the latest Public Health Report of the Marine-Hospital Service, based on the report of Stiles and Hassall,[1] attention is called to an Asiatic parasite that appears to have found a lodgment in this country, the Paragonimus Westermanii, a lung fluke that produces the disease known as parasitic hemoptysis in Korea and Japan. It was first found in a cat and dog in 1894 and 1895, but recently the government inspectors have met with it repeatedly in hogs at the Cincinnati packing-houses. It is thought probable that with the increasing intercourse with the Orient, sporadic cases in man will sooner or later be encountered. The human infection is described by Manson in his recent work on "Tropical Diseases," where the parasite is called Distomum Ringeri. The symptoms are cough and hemorrhage from the lungs, and in cases where the parasite attacks the brain, localized or Jacksonian epilepsy. The sources of infection to man are not very well known, but are probably through some invertebrate, and are conveyed

1. See also abstract of paper read by Dr. C. W. Stiles before the Philadelphia Pathological Society, Nov. 22, p. 1647.

through drinking water, hence the importance of attention to this point. Infected animals and human sputa or hemorrhages are dangerous because of their disseminating the ova, and with them the range of disease, but the meat of infected animals is not dangerous *per se*. It is well that the medical profession should receive this timely warning and cases of hemoptysis or localized convulsions in ex-residents of the Orient, whether native or foreign, will bear inspection. As to the need of abattoir inspection there should be no need of amplification.

TEMPERANCE IN FRANCE.

The reported passage of a resolution by the French house of Deputies against the manufacture and sale of alcoholic liquors pronounced hurtful by the Academy of Medicine, and especially of absinthe, in France, is an evidence of the interest aroused in the alleged causes of national degeneracy in that country. According to all reports, France is suffering in several ways, and her experience should serve as a warning to other countries where the same evils exist to a greater or less extent. Absinthe is an extreme evil, but there seems to be a general awakening in several continental states in regard to the evils of drinking, not only of absinthe, but also of other forms of alcoholic beverages. The temperance workers should derive some encouragement from even a partial prohibition measure in France, which has only recently come to realize its dangers from this and other causes.

PROFESSIONAL SECRECY AND CRIMINALS.

According to a newspaper report, a Chicago physician is supposed to know the whereabouts of the principal in a recent murder case and refuses to give any information on the ground that he is bound to protect his patient by the ethics of his profession. In commenting on this supposed fact, the newspaper assumes that the medical profession has set up such a rule as would require physicians to conceal criminals, and says: "Too often fugitives from justice are aided in their attempts to escape by doctors who are over-zealous in their observation of so-called professional ethics. It is time for the medical profession to define clearly where it stands on this important matter." There is a serious misapprehension of facts in the above quotation. Medical secrecy does not demand anything of the physician that would make him an accessory after the fact in a criminal case. Physicians are not justified in doing anything to balk justice or to mislead authorities. They are not, however, detectives or policemen, and it is not to be expected that they should desire to usurp their functions. The physician in question has no excuse in medical ethics if he did anything actively to mislead the authorities, such as concealing the times of his visits, or acting in any way differently from what he would in an ordinary case, one in which there was no suspicion. Criminals have no special privilege as regards medical secrecy, and there is no reason why a physician should plead medical ethics as an excuse for concealing their location, certainly not if it required him to dissemble or mask his own actions. For alleged reasons of public policy, laws have been passed in some states making professional communications to physicians privileged, but there has been no such legislation in Illinois, and a physician secretly treating known criminals who are wanted by the police might easily be subjected to serious inconvenience and possibly to penalties. The situation is not a satisfactory one and the wisest plan might perhaps be to treat all suspicious patients as emergency cases; apply first aid needed and then refer to a hospital.

A HOSPITAL STRIKE.

A recently reported occurrence in a Chicago hospital is of interest as possibly pointing a moral. According to the newspaper account, a nurse in a private hospital was detailed to attend a certain patient. It developed, however, that the case was one of scarlet fever, and she refused to obey and was consequently promptly discharged. As contagious diseases were not usually received in the hospital the other nurses held that their associate had been wronged, and they went on a strike. What the final outcome to the affair was, has not, to our knowledge, been published, but assuming the facts to be as stated, the occurrence illustrates certain possibilities that are not altogether satisfactory to contemplate. A strike of nurses in a hospital is a disagreeable matter and might easily be a very serious one, involving possibly the comfort, the welfare and, it might be, even the lives of helpless patients entrusted to their care. A sympathetic strike, however altruistic the course may seem to its partakers, is even more an evidence of an inconsiderate and one-sided view of their duties and their relations. When so much is said, as is at present, about the high professional ideals that exist among hospital trained nurses and their efforts to realize them, the report of such a performance as the one here noticed is an unpleasant disappointment, indicating as it does that the alleged ideals and professional feelings are not always effective on conduct, if existent. If nurses wish to be considered as anything more than ordinary mercenaries in the battle against disease and for human welfare, such occurrences will have to be extremely infrequent, and that a single instance has occurred is a disaster to their prestige as a class.

THE CROTTE CURE AGAIN.

At the Columbus meeting of the AMERICAN MEDICAL ASSOCIATION desperate efforts were made by a representative of a Frenchman, named Crotté, to have the ASSOCIATION endorse his electrical method of treating consumption, for which he claimed great virtues. In spite of the fact that he failed to get recognition in any of the devious ways attempted, he caused to be sent out through the press dispatches the announcement that the ASSOCIATION had not only endorsed his treatment, but that the members had tendered him a banquet in token of the great work he had done for suffering humanity. Through efforts made by THE JOURNAL, the same publicity was given to a general denial that had been given to the false announcements. Later, we find these people working in another way to get medical endorsement of the method. Asserting that medical men would not give the method a fair trial, and claiming that by it the results were "100 per cent. of cures in the incip-

jent stages, 75 per cent. in the secondary stages, and 50 per cent. in the cases that would under regular treatment be considered hopeless," the St. Luke's Hospital, of New York, consented to experiment with the method. From the *Medical News*, of December 15, we learn with what result. In spite of the careful tests detailed, which we copy from the *Medical News*, the unbiased scientific opinion of all who observed them was that there is nothing in the treatment, and this opinion is most positively conveyed in a circular sent out by the hospital in answer to all inquiries.

The treatment was given regularly and systematically. Not only were the bacteriological examinations and blood-counts made at the Hospital, but the sputum was sent to the New York City Board of Health, where experiments were made upon guinea-pigs with the supposedly attenuated virus to see whether there was any actual lessening of virulence of the tubercle bacillus. These experiments were carried on carefully, exactly and hopefully for three months with *absolutely negative results*. None of the changes that were claimed would take place eventuated, from the bacteriological standpoint. The effect of placing the patient in front of the static machine was as ineffectual as placing him before a mirror. None of the patients of the experiment improved any more than did others of like degree of infection on the same good food, regular hours and rest.

In spite of the unfavorable verdict, the experiments at St. Luke's are, it is said, being quoted by the promoters of the scheme as evidence that the treatment has been adopted and endorsed by the authorities of this reputable institution. Reference has been made to them in medical meetings and medical literature, and always with the assumption that the test experiments were successful. It is a case of touching pitch and being defiled; denials are useless, the quack's point has been gained. It may be necessary or useful sometimes to test these exploited "cures" in hospitals; we do not say it was not so in the present case, but it has its disadvantages. Hereafter the Crotté treatment can be safely let alone, unless it should become necessary by legal proceedings to stop the misrepresentations of its promoters.

THE MEDICINAL TREATMENT OF PULMONARY TUBERCULOSIS.

As we mentioned in our editorial columns,[1] the newspapers recently discovered a new specific for pulmonary tuberculosis, but, unfortunately, reportorial judgment in this instance was in error, while if the published doses had been administered the mortality would have been not inconsiderably increased. The fact is that the recommendation made in a medical journal of a line of treatment that had proved successful in the hands of competent observers was jumped at by the enterprising, but not equally discriminating, reporter as the exploitation of a specific. Dr. Adolf Hoff,[2] one of the assistants at the clinic of Professor Stoffella, of Vienna, described the plan of treatment pursued with outpatients suffering from pulmonary tuberculosis. The fundamental formula is as follows:

R.	Arsenous acid	1
	Purified potassium carbonate	2
	Cinnamic acid	3
	Distilled water	5

Boil and make a perfect solution. Then add:

	Cognac	25
	Aqueous extract of opium	3
	Distilled water	25

Make a solution and filter. Dose: 6 drops after the midday and the evening meal, gradually increased to 22 drops.

In addition hydrotherapeutic measures are employed. These consist in applications to the chest and the back of cold water, with friction at night before retiring, followed after the skin has been well dried by the donning of an armless jacket well wrung out in cold water, and covered by a shirt. The jacket is worn throughout the night, being removed, however, in the morning before the patient gets out of bed. The chest and the back are then thoroughly dried and the cold wet rubbing is repeated, after which the patient gets up and dresses. In a small number of instances the persistence of the fever requires the employment further of the following formula:

R.	Cinnamon-water	70
	Tincture of chinoidin	25
	Quinin sulphate	55
	Aromatic sulphuric acid	65
	Sirup of cinnamon	20

Mix. Dose: 1 tablespoonful thrice daily.

When the cough is especially troublesome and unyielding, dionin may be prescribed in the following combination:

R.	Dionin	2-35
	Purified ammonium chlorid	3-5
	Sodium chlorid	10

Mix and divide into 10 equal parts. Dose: as many as four a day.

1. THE JOURNAL A. M. A., Dec. 8, p. 1484.
2. Wiener Med. Wochenschrift, Nos. 47 and 48, 1900.

Medical News.

CALIFORNIA.

DR FRANK T. FITZGIBBON was appointed city vaccinator of San Francisco, November 30, to succeed Dr. W. G. Hay, deceased.

YAB CHOW, the San Diego Chinaman, arrested for practicing medicine without a license, has forfeited his bail and left for the North.

DR. HENRY A. L. RYKFOGEL has resigned as city bacteriologist of Oakland and Dr. Charles W. Rowe has been chosen as his successor.

THE ASSOCIATED PHYSICIANS' HOSPITAL SOCIETY has been incorporated at Bakersfield by Drs. J. L. Carson, Thaddeus W. Helm, Thomas E. Taggart, and others, with a capital stock of $10,000.

THE SAN FRANCISCO Board of Health has petitioned the board of supervisors to appropriate funds for the purchase of an X-ray apparatus for the City and County Hospital, and for the installation of electric lights in the operating rooms in that institution and in the Central Receiving Hospital.

COLORADO.

ST. LUKE'S HOSPITAL, Denver, by decree of its board of directors, will allow no member on its medical staff who is connected with any other hospital.

ON ACCOUNT of the typhoid fever epidemic at Fort Collins, where more than 200 cases are now reported, the local board of health has employed Dr. William C. Mitchell, Denver, bacteriologist of the State Board of Health, to investigate into and report on the cause of the outbreak.

THE NEW HOSPITAL of the Denver and Rio Grande Railway at Salida is nearly completed, at a total cost of about $45,000. The employees of the road who support the hospital are making strenuous efforts to have its management left with them rather than with the railway company, as heretofore.

DR. THOMAS J. CARLIN, Health Commissioner of Denver, has applied to the city council for an appropriation for the proper medical inspection of schools. He has also drawn up a set of rules regarding the use of disinfected cuspidors, which will be given to proprietors of stores, and compliance with which will be enforced.

CONNECTICUT.

DR. EDWARD P. WOODWARD, the oldest practicing physician in Bristol, Conn., had a paralytic attack, November 27, but is improving.

DR. EDWARD T. BRADSTREET, Meriden, has been appointed medical examiner to the coroner of New Haven county, succeeding Dr. G. H. Wilson, who resigned after 18 years' tenure of office.

DR. THOMAS D. CROTHERS, Hartford, has been appointed professor of diseases of the brain and nervous system, with especial reference to the effects of alcoholic and drug poisons, at the New York School of Clinical Medicine.

ILLINOIS.

DR. S. M. WYLIE, Paxton, left for a trip to Costa Rica, December 18.

DR. WILBUR P. ARMSTRONG, Springfield, who has been critically ill for several days, is now said to be improving.

THE NEW INFIRMARY at the Illinois Northern Hospital for the Insane, Elgin, constructed at a cost of about $38,000, was opened December 4. The building will accommodate 110 patients.

THE MARIETTA PHELPS HOSPITAL at Macomb is now completed. It contains 14 rooms, besides the necessary operating-room, bath-rooms, etc., and is thoroughly fitted and equipped for its work.

THE COMMITTEE of the city council of Moline appointed to investigate the City Hospital scandal, has reported that the physician and director of the hospital charged with using violent and profane language in the operating-room, and with adding croton oil to a bottle of port wine to detect theft of the latter, should be severely criticized for his conduct and should resign.

DR. MORRIS MEYEROVITZ, chairman of the committee on lodging-houses and sanitation of the State Board of Health, will recommend the following regulations for lodging-houses: 1. Mattresses must be made of washable rubber. 2. Houses must be fumigated at least once a week. 3. Better toilet arrangements must be provided. 4. Each lodging-house shall have a temporary isolation room, for use in case of an outbreak of communicable disease, and before the local health board is able to act.

Chicago.

DR. ALBERT B. HALE has recovered from his recent illness, returned to Chicago, and resumed practice.

DR. BAYARD HOLMES, who has been seriously ill with wound-infection and erysipelas, has recovered and is regaining strength rapidly.

DR. CHARLES M. CLARK, surgeon of the Thirty-ninth Illinois Volunteer Infantry during the Civil War, is lying seriously ill at his home, 1030 W. Twelfth St.

NO INFLUENZA deaths have been reported since December 7, although the influenza bacillus is found frequently in the laboratory examinations. Diphtheria is also much less severe than usual.

SUIT HAS BEEN BROUGHT against the Commissioner of Health and others by a woman, who claims $50,000 damages for being confined in the isolation hospital, where she contracted smallpox, and thereby destroyed her beauty.

DURING the thirty days from November 7 to December 7, 129 calls were made from various schools, for medical inspectors. In 86 instances children were excluded; 54 exclusions being on account of diphtheria, and 8 school-rooms were disinfected.

A TOTAL of 444 deaths was reported for the week ended December 15, being an annual death-rate of 13.59 per 1000. Of these 238 were males; 205, females; 90 under 1 year and 84 over 60 years. Consumption caused 43 deaths, pneumonia 75 and violence 24.

THE PRESIDENT of the "diploma-mill," whose latest name was Metropolitan Medical College, was sentenced on December 15 to serve one year in the Du Page county jail and to pay a fine of $500. Sentence on the other two defendants was deferred until the next term of court.

SMALLPOX is causing great concern. At present the few cases are imported. This fortunate condition of affairs can not be expected to continue, as the disease is epidemic in other parts of the country. The warning given by the Health Department is: "Do not neglect vaccination."

INDIANA.

A DOCTORS' BUILDING seven stories in height, is under construction opposite the Denison House, Indianapolis.

AN ITINERANT osteopath, clairvoyant and magnetic healer, was fined $25 and costs at Delphi, December 1, for practicing medicine without a license.

DR. LYMAN E. OTT, Franklin, has resigned as a member of the board of pension-examining surgeons, and has been succeeded by Dr. John W. Dixon.

THE MEDICAL COLLEGE OF INDIANA is about to erect a large addition to its present college building. The addition will be four stories high, and will be used for laboratory work.

DR. RALPH DRAYER, city bacteriologist of Fort Wayne, has resigned because the president of the city board of health had failed to report or to enforce quarantine regulations in a case diagnosed by Dr. Drayer as diphtheria.

IOWA.

SIOUX CITY has enacted an ordinance that all members of any family in which diphtheria develops, shall be inoculated with antitoxin.

THE CENSUS of the insane of the state shows that 2901 are under restraint in the three state asylums, 987 in the 52 county institutions, and 453 in the 4 private hospitals, making a total of 4341.

DR. WILLIAM D. MIDDLETON, Davenport, dean of the medical department of the Iowa State University, has been honored by the medical students of the university, who have named their new scientific society the "Middletonian."

THE BOARD OF HEALTH of Sioux City has two unpleasant facts to face: 1, that the appropriation for the year is exhausted four months before its close, and 2, that smallpox is prevalent in the towns and country around Sioux City.

DR. WILLIAM T. WRIGHT, Denison, had a runaway accident, November 20, while making a night call. His team became frightened, and he jumped out, but his foot caught in the lines and he was dragged for nearly half a mile. He was badly bruised, and nearly frozen, but it is thought that he will recover.

MARYLAND.

DR. CORNELIUS DEWEESE, for four years pathologist at the Maryland Hospital for the Insane, Spring Grove, has resigned to accept a similar position at the Government Hospital for the Insane, Washington, D. C.

DR. ABRAM CLAUDE celebrated his eighty-second birthday in Annapolis, December 4. Dr. Claude has been mayor of Annapolis a number of times and held the professorship of natural science in St. John's College from 1871 till 1883. He is a graduate of St. John's College and of the University of Maryland.

MARYLAND is the only state which does not have a pharmacy law. At a meeting of the Maryland Pharmaceutical Association, held December 12, in Baltimore, Dr. Alfred R. L. Dohme reported that he had canvassed the entire drug trade of the state in the interest of a bill to restrict the practice of pharmacy to competent persons.

Baltimore.

DR. WILLIAM OSLER has been elected president of the Laennec Society at Johns Hopkins Hospital.

THE PROCEEDS of the "Zoo" on December 20 and 21 will be given to the Maryland General Hospital. The lady visitors of the hospital will have charge of the entertainments on those days.

WITHIN SIX DAYS two physicians of the city, Drs. Marshall Smith, health warden of the Twentieth ward, and S. Griffith Davis, were attacked by diphtheria, but both are reported as doing well.

BIDS FOR the proposed National Temperance Hospital have been submitted and are under consideration. The building is to be erected on Baltimore street, near Carrollton avenue, and will cost about $30,000.

PROF. JOHN J. ABELL, of Johns Hopkins Medical School, was seriously injured by an explosion of chemicals December 11, while experimenting in his laboratory with epi-nephrin, the active principle of the suprarenal capsule.

THERE have been performed at the Johns Hopkins Hospital 15 operations for perforation of the bowel in typhoid fever, the operators being Drs. Finney, Cushing and Mitchell. Of these, 6, or 40 per cent., recovered, an unusually large proportion.

THE DEAN of the University of Maryland, School of Medicine, reports 332 students in that school. Of this year's matriculants, all but three were able to furnish the evidences of scholarship required by the American Medical College Association. The total number of matriculants in the law, medical and dental departments is 790. There is also a flourishing nurses' training school.

DR. WILLIAM OSLER has had executed and placed in the hall of the Medical and Chirurgical Faculty a life-size bust crayon portrait of Dr. Charles Frederick Wiesenthal, the physician of Frederick the Great, who settled here in 1755, and who is re-

garded as the father of the medical profession of Baltimore. He established a medical school shortly after his arrival, and during the Revolutionary War was a surgeon in the Maryland line.

MICHIGAN.

DR. COLLINS H. JOHNSTON, Grand Rapids, who went to Custer to investigate the smallpox outbreak there, reports that in that town of not more than 300 inhabitants, there were about 100 cases of the disease, and that until a short time before, no steps had been taken to prevent or limit its spread.

THE SUPREME COURT has decided that members of state boards shall not receive more than the usual compensation for their services, whatever those services may have been. This decision will probably affect in a material degree the amounts to be paid to the members of the State Board of Health who have been investigating the smallpox epidemics, and who have heretofore been allowed $25 a day for such services.

MINNESOTA.

ASBURY HOSPITAL, Minneapolis, which was under quarantine on account of smallpox for nearly a month, was re-opened December 6. The disease was confined to the original patient affected.

THE NEW city hospital at Owatonna was opened December 15.

THE WALKER SANATORIUM, which was re-opened only a short time ago, was burned December 8, fortunately without loss of life. The loss was $7000, with an insurance of $2000.

DR. HENRY M. BRACKEN, Minneapolis, has prepared an exhaustive review of all the cases of leprosy in the northwest. The number is 75, 61 of which are Minnesota cases, although only 17 patients are now living in Minnesota. He thinks that the establishment of a leprosarium in the state should be seriously considered.

NEBRASKA.

DR. ANDREW JOHNSON, Omaha, has been appointed superintendent of the Institution for Feeble-Minded at Beatrice.

DR. GEORGE H. BRASH, Beatrice, has been appointed a member of the State Board of Health in place of Dr. Benjamin F. Crummer, of Omaha, who has done most effective work as a member of the board.

NEW JERSEY.

DR. WINTHROP D. MITCHELL, who has been city physician of East Orange for six years, has resigned.

BECAUSE of the outbreak of diphtheria in the Elizabeth General Hospital the institution has been quarantined. The Blake Memorial Hospital for Women, which adjoins the General Hospital, has been ordered closed by the board of health. There have been 8 cases of diphtheria at the General Hospital, with 1 death.

THE FRIENDS of Dr. Samuel A. Helfer, Hoboken, who, at the time of the steamship fire in June last, was incessant in his labors in caring for the injured and recovering the bodies of the dead, have petitioned the German minister at Washington to bring the matter before the Emperor and to recommend that a medal of honor be awarded Dr. Helfer.

THE STATE BOARD OF HEALTH has instituted suit against the Trenton Abattoir Company, charging it with bringing diseased cattle into the state. It is further charged that cows found to have been suffering from tuberculosis were bought by this company and subsequently sent to Trenton, where the milk from the animals was sold. Health Inspector Bell demanded that the animals be killed at once. Two witnesses were present when the diseased animals were destroyed. A penalty of $25 for each head of cattle may be imposed.

THE STATE BOARD OF HEALTH is considering the advisability of disinfecting the books used in circulating libraries of the state, and have decided that they must be fumigated at regular intervals. Experiments are being carried out which, it is hoped, will determine the best method of disinfecting books. It is said that this action was due to the fact that books have been sent out to a town in the country where scarlet fever was prevailing and were then transferred back to the library. At present there are forty-four distributing libraries over the state. The books are to be disinfected as they are returned.

NEW YORK.

DR. FREDERICK W. MANLEY has resigned as house-surgeon of St. Joseph's Hospital, Syracuse, and will practice at Rensselaer. He will be succeeded by Dr. Aloney I. Rust, whose place as house-physician will be taken by Dr. Thomas F. Foreman.

Buffalo.

DR. HAL B. BROWNELL has been appointed examiner in lunacy by Judge Emery.

THE COMMITTEE OF JUDGES appointed by the council of the Academy of Medicine to act on the Marcell Hartwig prize essay, announce that all papers presented by fellows of the Academy during the year will be eligible for the prize of $50. Three copies of each paper, either printed or typewritten, must be sent to the committee, of which Dr. Grosvenor is chairman. All papers must be handed in before the next annual meeting to be held in June.

THE SPENCER LENS COMPANY, of which Dr. Roswell Park is president, is making an attempt to establish under American conditions a scientific institution similar in methods to that of Carl Zeiss, in Jena. To this end it has secured the services of Dr. (Phil) Hermann Kellner, for many years assistant to Professor Abbe, as scientific director, and of Carl F. Dieckmann, formerly of Göttingen, and more recently of Jena, as general superintendent.

ACCORDING to figures compiled in the department of health, scarlet fever has increased nearly 25 per cent. in the present month, and there is every indication that an epidemic may prevail here before the winter is over. All school principals are being notified of cases within their jurisdiction. The number of cases of diphtheria is also increasing and probably 90 cases will be reported before the end of this month. Typhoid fever is abating. In October there were 52 cases, in November 57, and in the first 11 days of December only 8 cases were reported.

New York City.

THE NEW government hospital, which has been erected at a cost of $200,000, was accepted by the sinking fund commission December 11.

THE REPORT of the health department shows that there are now twice as many cases of typhoid fever in the city as there were at this time last year. This is explained by the long mild autumn.

THE COMMISSIONER OF CHARITIES has applied to the board of estimate and apportionment to condemn property on Lenox avenue, between 136th and 137th streets, that a new hospital may be built thereon to take the place of the old Harlem Hospital, which is unfit for habitation.

SMALLPOX continues to spread slowly, several new centers of infection having arisen as a result of a street-car conductor continuing at work after the eruption had appeared. So far there have been 54 cases taken to North Brother Island, of whom 8 have been discharged and 3 have died. Vaccination, both public and private, is proceeding rapidly.

ACCORDING to the annual report of the State Charities Aid Association, the most urgently needed additions to the department of public charities are: a new Harlem hospital, a separate hospital for cases of consumption, a convalescent hospital, a small municipal lodging house for women and children, and nurses' homes in conjunction with the hospitals on Randall's and Blackwell's Islands.

OHIO.

DR. ROBIN W. C. FRANCIS, Cincinnati, has been appointed demonstrator of physiology in the Medical College of Ohio.

THE 48 women in the state penitentiary at Columbus ask for nearly as much medicine as the 1800 men there confined, according to the prison physician, Dr. Thomas.

LAKESIDE HOSPITAL, Cleveland, has received a gift from H. Melville Hanna of 1000 shares of Northern Pacific preferred stock, the present value of which is about $82,000.

DR. LOUIS MALONEY, who has been serving as acting-assistant surgeon in Cuba and the Philippines for the past two years, has been invalided on account of fever contracted in the tropics.

THE ANNUAL REPORT of the Cleveland State Hospital for the Insane shows that 1466 patients were treated during the year and that, on November 15, 1085 patients were under treatment. The percentage of recoveries was 31.75. The per capita cost of maintenance was $142.54.

"DR." HULETT, Columbus, state secretary of the osteopaths, has advised those of his faith in the state, not to take the state examination, on the ground that the State Board of Medical Registration and Examination has no right to grant certificates, even if the examination is passed.

ON ACCOUNT of the prevalence of smallpox in that district of the state, the board of health of Jackson has ordained that all school children be vaccinated; that those unable to pay will be vaccinated free of charge; that all public balls and dances are prohibited until further orders, and that all cases of chicken-pox or other contagious diseases be reported at once to the board.

PENNSYLVANIA.

DR. JAMES B. MONAGHAN, Shenandoah, has been appointed physician to the Schuylkill County almshouse at Pottsville.

THE LAW authorizing school directors to assume certain functions of boards of health has been accepted by only 56 out of 2700 directors.

THERE have been 275 cases of smallpox with 8 deaths reported in the state during 1900, in 50 localities. Diphtheria has been partly suppressed in 38 places, and scarlet fever in 19.

DR. FRANCIS X. WEIL, health officer of York, reported 46 cases of diphtheria during November, three-fourths of which occurred in one ward of the city. The board of health has distributed antitoxin freely to the physicians of the city, has ordered a formalin lamp and has raised the salary of the health officer from $30 to $40 a month.

THE STATE BOARD OF MEDICAL EXAMINERS has published the statistics of candidates recently examined. The result is as follows: Of graduates of the University of Pennsylvania, 121 were examined and 2 failed; of Jefferson Medical College, 38 were examined and 4 failed; of the Medico-Chirurgical College, 20 were examined and 4 failed; of Western Pennsylvania Medical College, 67 were examined and 9 failed; of Woman's Medical College (Philadelphia), 16 were examined and none failed; of Baltimore Medical College, 12 were examined and 5 failed; of Maryland Medical College, 4 were examined and 3 failed; of the College of Physicians and Surgeons, Baltimore, 3 were examined and 2 failed; of graduates of other institutions and miscellaneous, 38 were examined and 8 failed. The total number examined was 327, of whom 41 failed.

Philadelphia.

A PROVISIONAL bequest of $5000 has been made to the Presbyterian Hospital by Mrs. Helfenstein of this city.

DR. J. HENDRIE LLOYD, who has been for many years on the staff of the Philadelphia Hospital as neurologist has resigned.

AN INCREASE in the number of assistant medical inspectors and other employees of the board of health has been asked for, namely, two medical inspectors, at a salary of $1200 a year; one assistant disinfector, at $900; one milk inspector, at $1020; two collectors of milk specimens, at $720, and three assistant inspectors of house drainage, at $1200.

IN THE CASE of Dr. Gerald D. O'Farrell, Jr., who was prosecuted for not reporting a case of what was called diphtheria, the defendant stated that it was a mistake, and when he stated on the card returned to the school that it was "diphtheria" he was thinking of another case of this disease which he was treating at the time. The magistrate dismissed him with a warning.

IN ORDER to satisfy itself of the needs of the insane department of the Philadelphia Hospital (Blockley), members of finance committee of council paid a visit to that institution on December 10. Dr. John V. Shoemaker, president of the Board of Charities and Corrections, and Superintendent Geary escorted the visitors through the institution. An appropriation of $50,000 has been asked for.

THE HEALTH of the city continues to be much better than for the corresponding periods of previous years. The total number of deaths for the week ended December 15 was 369, which is 76 less than for the corresponding period of last year and 112 less than for the same period of 1898. The principal causes of death were: Nephritis, 18; cancer, 15; tuberculosis, 47; heart disease, 27; pneumonia, 53; diphtheria, 16.

THE MEDICAL INSPECTORS of public schools have made their report from January 1 till October 31. It shows that 5876 cases were reported. Of these 3446 were contagious, chief among which were sore throat, 1520; ringworm, 753; conjunctivitis, 397; pediculosis, 212; measles, 152; mumps, 118; impetigo, 112; chicken-pox, 73; influenza, 31; whooping-cough, 20; ivy poisoning, 13; diphtheria, 12; scabies, 8; scarlet fever and syphilis, each 4, and consumption, 2. More than 1000 cases of markedly defective vision were also found.

SOUTH DAKOTA.

DR. LYMAN F. BABCOCK, city physician of Deadwood, has resigned because his suggestions were not acted on, and because he had not been given any authority with which to enforce these suggestions as to the public health.

A PRESBYTERIAN minister of Wilmot has applied to the circuit court to compel the State Board of Health to issue him a license to practice medicine. He has been arrested several times for practicing medicine without a license, but has escaped on the gound that his prescriptions were given only in emergencies and that he made no charge for his services.

THE SUPERINTENDENT of the state asylum at Yankton, in his report, details the need of increased accommodation for patients, as the institution is overcrowded and as insane patients are now being held in county jails because there is no room for them at the state asylum. He also advocates that the name of the institution be changed to the "State Hospital," and asks for an appropriation of $204,672 for the next two years.

THE SMALLPOX cases having increased to 30 at Deadwood, owing to refusal by the city officials to exercise proper quarantine, and so aid the physicians in preventing the spread of the disease, as noted in last week's JOURNAL, neighboring towns threatened to quarantine against Deadwood unless there was an immediate change in policy. The city now admits the presence of the disease and is taking every precaution to prevent its further spread.

TENNESSEE.

DR. JAMES A. ALBRIGHT, secretary of the State Board of Health, reports that between March 5 and November 16, 1389 cases of smallpox were reported in the state, three-fourths of which occurred in negroes.

DR. JOSEPH W. JOHNSON, Chattanooga, who has been studying in Paris and Vienna for several months, has been recalled to America by the death of his father, and as soon as the estate matters are settled will practice in Chattanooga.

THE CONTROVERSY between the State Board of Health and certain local physicians regarding the diagnosis of cases known as chicken-pox, measles, "Cuban itch," etc., has been followed by an outbreak of smallpox, just as it has been in many other localities. In Campbell county, 20 cases of smallpox were found diagnosed as chicken-pox; in McMillin, 17 cases were reported, and also a number of cases in Hamilton County. Eighteen deaths have been reported.

TEXAS.

DR. J. M. NIXON, Bell County, and president of the county medical society, has been accepted as a medical missionary of the Methodist Episcopal church, and ordered to China.

DR. JOHN M. MCCUTCHEON, Temple, has been re-appointed health officer of Bell County. The commissioners intend to act upon his suggestion and establish an isolation hospital on the county farm.

UTAH.

THE STATE BOARD OF HEALTH has issued an order that no child who has not been vaccinated shall be admitted to a public school in the state.

DR. EUGENE W. WHITNEY, Salt Lake City, has been appointed inspector of contagious diseases among school children. He is to receive a salary of $150 per month and is to give his entire time to the duties of the office.

A RIFLE QUARANTINE has been established at Scofield, where there are 17 cases of smallpox. This has been done without sanction of the State Board of Health, which has been endeavoring to learn particulars of the epidemic and to adopt measures for the limitation of the disease.

AN ORDINANCE was passed by the Salt Lake City council December 4 making it a misdemeanor for persons knowing of the existence of measles, chicken-pox and all eruptive diseases not to report the same to the health authorities. The penalty attached to a violation of the ordinance is a fine of from $5 to $100 and ninety days in jail.

VERMONT.

A BILL looking to the incorporation of a public hospital at Brattleboro has been passed by the House of Representatives of the state.

THE STATE BOARD OF HEALTH held its biennial meeting for organization at Burlington, December 4. Dr. Charles S. Caverly, Rutland, was elected president; Dr. Henry D. Holton, Brattleboro, secretary, and Dr. Truman R. Stiles, St. Johnsbury, treasurer. Dr. J. H. Hamilton, Richford, who has been secretary of the board for ten years, resigned, and resolutions of regret were passed by the board.

AT THE ANNUAL MEETING of the directors of the Mary Fletcher Hospital, Burlington, held December 5, the following staff was elected for the ensuing year: Drs. Patrick E. McSweeney, Samuel E. Maynard, William R. Prime and Harris R. Watkins, attending physicians; Drs. Leroy M. Bingham, John B. Wheeler, Donly C. Hawley and Henry C. Tinkham, attending surgeons, and Dr. Marshall C. Twitchell, ophthalmologist.

AN AMENDMENT to the law regulating the practice of medicine in Vermont has been presented to the House of Representatives which provides that the board of censors shall issue certificates permitting practice by any persons who present diplo-

mas from medical colleges and also pass examination before the board. Applicants shall pay a fee of $5 to the board for examination. Only state medical societies shall elect boards of censors.

WEST VIRGINIA.

THE HARRISON COUNTY HOSPITAL COMPANY, of Clarksburg, has been incorporated with a capital stock of $50,000.

THE STATE BOARD OF HEALTH examined 34 applicants for license to practice medicine, at Wheeling, November 15. Of the applicants, five were colored.

A PLAN has been formulated by a resident of Morganstown whereby a hospital shall be established in that place for the benefit of students at the university.

DR. W. C. BILLINGS, U. S. M.-H. S., has been sent to Clarksburg to take charge of the smallpox situation. There are now 10 cases in Clarksburg and more than 100 in Harrison and Wetzel counties.

WYOMING.

THE CITY COUNCIL of Cheyenne has adopted regulations providing for the appointment of a sanitary inspector to look after the dairies furnishing milk to the city.

PROPOSALS for construction of a post hospital and hospital steward quarters at Fort Mackenzie have been advertised for by Major J. W. Pope, chief quartermaster, Denver.

GENERAL.

DR. IRA C. BROWN, formerly of Buffalo, has returned to Manila on the *Thomas*, having been appointed chief surgeon for the district of Panay, P. I.

DR. FRANCIS M. NESMITH, superintendent of Garfield Hospital, Washington, D. C., has severed his connection with that institution to accept a like position at the Presbyterian Hospital, Chicago.

GOODWIN BROWN recently contended before the industrial commission that vigorous legislation was necessary to protect the country from the influx of insane immigrants. He declared that quite 50 per cent. of the patients in the New York State insane hospitals were foreign born. The foreign-born insane are said to cost that state over $1,000,000 annually.

DR. CLARENCE TREHOLTZ, asst-surgeon, U. S. A., with his wife, will attempt to make a winter trip to Fort Egbert, Alaska, traveling part of the way by steamer, part by railroad, and over 500 miles by dog sleds. Under orders from Gen. Shafter, Dr. Treholtz purposed to start this week on his long journey. The distance from White Horse to Egbert is 560 miles.

UNIQUE OBSTETRIC FEES.

The first medical convention of the physicians of the Lake St. John, Chicoutimi and Saguenay district in Canada assembled in a general convention November 11 at Chicoutimi, Quebec, according to the *Bull. Méd. de Québec*. Among the questions discussed was that of fees, and all agreed not to accept less than $3 for an ordinary accouchement, with 25 cents additional for every hour over six, $4 for a twin accouchement, and 50 cents for adhesion of the placenta or hemorrhage.

ASSOCIATION OF MEDICAL LIBRARIANS.

The "exchange" of this association has been moved from Philadelphia to Baltimore, and is now located at the Hall of the Medical and Chirurgical Faculty, under charge of Miss Noyes, the faculty's librarian. The object of this association, which was founded in Philadelphia in May, 1898, is "to foster medical libraries and to maintain an exchange of medical literature among its members." The exchange was founded last October, and a large number of books and periodicals have been procured by exchange, gift or purchase, and distributed to the membership libraries. Already there are over 150 medical libraries in existence, over 100 of these being separate medical libraries and the rest branches of general libraries. In many large towns the members of the profession have begun to make collections and they will receive important aid from this exchange.

THE ARMY EFFICIENCY BILL.

Dr. H. L. E. Johnson, Washington, D. C., chairman of the committee on national legislation of the AMERICAN MEDICAL ASSOCIATION, under date of December 18, telegraphs as follows: "The committee on national legislation has been in conference with the military committee of the Senate and House of Representatives considering the Army Efficiency Bill. 4300, and has recommended a substitute for Medical Section 18, according to the wishes of the civilian physicians of the United States and of the surgeon-general. The committee on national legislation appeals to every member of the AMERICAN MEDICAL ASSOCIATION requesting him to write or telegraph at once to both the chairmen, Senator Hawley and Representative Hull, urging them to vote for and favor the passage of the substitute presented by the committee. The original bill is highly objectionable.

NATIONAL QUARANTINE STATIONS IN PORTO RICO.

The Marine-Hospital Service expects to have its quarantine stations in Porto Rico well equipped for the coming quarantine season. The floating disinfecting plant for San Juan is finished. It was found impracticable to locate a floating plant in the harbor of Ponce, on account of the unprotected character of same. Authority has, therefore, been obtained for stationing such a plant in the harbor of Guanica, about twenty miles west of Ponce, on the southern coast of Porto Rico. An excellent hulk has just been purchased by the Service for this purpose, and, as the machinery is already completed, all that remains is to remodel the hulk and install the machinery. It is, therefore, only a question of a few months until this barge will also be ready to be towed to its destination. Porto Rico will then be able to handle with efficiency and dispatch any infected vessels which may reach the island.

QUARANTINE ON DELAWARE RIVER.

In order to facilitate the conduct of the national quarantine service on the Delaware River and Bay, and to afford the shipping interests of Philadelphia greater facility in receiving information regarding vessels detained in quarantine and other matters pertaining to the quarantine service, the surgeon-general of the Marine-Hospital Service has detailed Surgeon H. W. Austin, in command of the Service in Philadelphia, to be quarantine officer for the Delaware Bay and River. The routine of the stations at Reedy Island and Delaware Breakwater will be conducted by the medical officers in immediate charge thereof, but they will be under the general supervision of Surgeon Austin, who is authorized to make periodical inspections of the stations and to visit them at any time when requested by the medical officer in immediate command.

THE HEALTH OF HAVANA, CUBA.

The report of Major W. C. Gorgas, surgeon U. S. Army, chief sanitary officer of the city of Havana, Cuba, for November, 1900, shows such a rapid decline in the prevalence of yellow fever that the disease is expected to disappear by the middle of December. During the month 306 cases were under treatment, of which number 54 were fatal. Immigrants from Spain furnished 240 of the cases and 44 of the deaths. It is stated that nearly 20,000 immigrants have arrived during the period January 1 till November 30, 1900. Notwithstanding the prominence of yellow fever in the mortality lists of the month, the number of deaths from all causes was only 444, which, on an estimated population of 250,000, is equivalent to an annual death-rate of 21.31 per 1000 living. The absolute number of deaths is smaller than that reported not only in any month of the year but in any month of the past ten years. Major Gorgas calls attention to the small number of houses in which yellow fever has occurred in 1900, compared with the total number of houses in the city, and to the relatively large number in which disinfection has apparently been successful. During the year 847 houses were infected. As no second case occurred in 668 of this number the measures taken to eradicate the disease appear to have been effective. In 122 of the infected houses a second case occurred after disinfection. These were again carefully disinfected and in 790 no third case occurred. He is of the opinion that the results of isolation and disinfection are well worth the labor, money and time spent on them.

CANADA.

THE VICTORIA HOSPITAL FOR SICK CHILDREN, Toronto, is now only $19,000 in debt. Six years ago there was a debt of over $100,000. The different lodges of the fraternal societies have been especially generous in the respect of financial assistance.

DR. W. H. ANDERSON, a graduate of Toronto University, has been appointed bacteriologist at the Williams Head Quarantine station in British Columbia in succession to Dr. Higgins, who returns to the government experimental station at Outrement, Montreal. Dr. Higgins was appointed to the Williams Head station when bubonic plague was at San Francisco, at Honolulu and in the Orient.

EXAMINATION OF SANITARY INSPECTORS.

Dr. Wyatt Johnston, Montreal, recently conducted an examination of the sanitary inspectors in the employ of the health department of that city. As a result many of these will be dismissed, as they are not considered to have the requisite knowledge for one employed in such a capacity. Hereafter

Montreal will employ men of more marked intelligence and ability in the conduct of this work.

TORONTO WOMAN'S MEDICAL COLLEGE.

The friends of this college are agitating for a special hospital. A meeting was held last week and the movement placed in the hands of Dr. Wishart, the secretary of the college. The women doctors of Toronto claim that they are accorded no privileges in any of the hospitals, with the single exception of the Western Hospital, and even in that, they are not allowed to treat any of the charity cases. The women of Canada will be asked to contribute twenty-five cents each toward founding such hospital.

SMALLPOX IN THE YUKON.

DR. MONTIZAMBERT has at last succeeded in tracing the origin of the smallpox outbreak in Yukon. He states the disease found its way into that country through a man from Seattle, who had gone direct to the creeks, and in that way spread the disease. From the Yukon, the epidemic spread to Skaguay, and was thence carried to Victoria, B. C., by the steamer *City of Seattle*. There were 350 passengers on board this steamer and these were kept in quarantine off Williams Head the requisite length of time.

ONTARIO HEALTH REPORT.

The November monthly report of the Ontario Provincial Board of Health shows that the total deaths registered during that month numbered 1906, as against 1501 for the corresponding month of last year. From typhoid fever alone 130 deaths occurred, this being the highest number on record. Of scarlet fever there were 10 deaths; diphtheria, 49; measles, 3; whooping-cough, 20; tuberculosis, 156. Typhoid fever has been very prevalent throughout Ontario all fall, which is set down to the dryness prevalent during the greater part of the season.

THE DOMINION CATTLE BREEDER'S ASSOCIATION AND TUBERCULOSIS.

This association met at the Winter Fair held at the Ontario Agricultural College at Guelph last week, and adopted a very strong resolution in regard to the tuberculin test in cattle. It reads as follows: "Resolved, That in the opinion of the cattle breeders of Canada, here assembled, the regulations relating to the importation of pure-bred animals, which requires the injection of tuberculin as a sure indication of the presence of tuberculosis, are unsatisfactory and likely to bring serious injury to the cattle-breeding industry of Canada; that while the test may be used as an aid in the detection of the disease, it is not sufficiently exact to be relied upon; that the disease may exist in such parts of the animal which makes it impossible to be transmitted by contagion or otherwise, and that no real service to the country is being rendered by its use in that connection. Therefore we earnestly request that the Minister of Agriculture take such steps as may seem desirable in order to discontinue its use in that connection."

"MEDICAL ALLIANCE OF AMERICA" SCHEME.

The Medical Alliance of America (Limited), of which notice appeared in THE JOURNAL over a year ago, has now invaded the city of Toronto, and apparently the physicians of that city are unmindful of the warning of the *Montreal Medical Journal*, as published in its September issue of 1899. The physician is first approached with an ordinary member's contract or application; $1 for admission and 15 cents per week, a whole year's assessment being required to be paid by the physician at once in advance. For this he receives the assurance that when sick himself his doctor's bill and medicines shall be paid for him just as for any ordinary member. The physician who joins this alliance is assured that he will be paid $1 for an office visit and not more than $1.50 for an outside visit. The contract, however, reveals the peculiar reading of the scheme. The prospectus of this alliance sets forth that their objects are to do away with the lodge-practice system, bad debts, and the taking of nostrums as well as the counter-prescribing of druggists, all no doubt commendable features, but other features are open to objection. It is to be sincerely hoped that the profession will look well into the propositions of the alliance before subscribing their names to any of these contracts. Their agents are claiming that over 200 doctors in Montreal, the Canadian home of this institution, have become members of the alliance.

FOREIGN.

THE FAMOUS English surgeon, Sir William MacCormac, has been authorized by the queen to accept the decoration of the French Legion of Honor conferred on him by the French government in appreciation of his care of French wounded soldiers in 1870, besides his scientific achievements.

LIETARD calls attention, in *Janus*, to the *Gazette Hebdom. de Méd. et de Chir.* for the last week in 1871. It contains a letter from Dr. Dechambre, resigning his post as editor rather than countenance the appearance of any advertisements on the cover of his journal. Lietard regards it as a historical relic worthy of recognition.

Daneffe has reported in *Janus* six metal trusses found on skeletons dating from the fifth and seventh centuries. The leather and cloth covering the pad were quite well preserved in tombs made of stone. None of the similar trusses in the principal museums of Europe, he states is older than the thirteenth century.

Ambassador Andrew D. White, acting on instructions from Washington, has written to the German Secretary of Foreign Affairs, begging him to express to Dr. Velde, of the German legation at Pekin, America's sincere gratitude for the services rendered by him to American soldiers and sailors during the siege of Pekin.

THE WATER-SUPPLY of Paris has been studied by an official committee which recommends that the springs, the source of the drinking water, should have a zone of protection drawn around them to prevent contamination, and in some cases more than a hundred square kilometers will be necessary. In this zone all measures must be taken to prevent infection of the water, with extraordinary precautions in case of typhoid fever.

The Austrian Lower House appointed on December 12 a committee of medical experts to investigate the prevalence of tuberculosis. In lower Austria 25 per cent. more deaths result from this disease than any other. Even smallpox, prior to the general vaccination caused a lower death-rate. The commission is to report as to the advisability of founding isolated sanatoriums for the tuberculous instead of admitting them into the general hospitals.

PROF. W. H. ERB'S sixtieth birthday was celebrated at Heidelberg, November 30. The *Muench. Med. Woch.* reviews his achievements in science as a discoverer, educator and practical physician, and holds him up to posterity as the ideal physician, with the keen individualizing glance of the investigator as he approaches the bedside, the tranquility of wide experience, comprehensive knowledge and remarkable memory. Besides his achievements in neuropathology, his work on electrotherapeutics was the pioneer in this line.

LODGE PRACTICE IN PARIS.

A NEW SOCIETY has been formed in Paris, the "Co-opération des Familles," which has notified physicians that their names are on the list of the society's physicians, but that each will be expected to make a reduction of 12 per cent. in treating members of the society. The account will be presented and paid in full, as usual. An agent of the company will call later and collect the 12 per cent., 10 for the member and 2 for the administrative expenses. The *Gaz. Méd. de Paris* remarks that the medical profession can not contend effectually against this rising flood of reductions and commissions, this modern style of doing business, in Paris at least, for the societies are very powerful.

DEATHS.

Among the deaths abroad of prominent practitioners we notice that of Dr. Richard Neale, November 22, aged 73. His "Medical Digest" has been one of the best-known British medical publications. If it is discontinued by his death it will be a serious loss to the profession in Great Britain. The death of Dr. J. Mortimer Granville, who is best known for his criticisms on the treatment of insanity in England, and for various semipopular publications, occurred November 23, at the age of 67. He was for a considerable time on the editorial staff of the *Lancet*, as well as on lay journals. He was a popular rather than a scientific writer, and was, in some of his views, eccentric to say the least; he was nevertheless to be counted as among the better known medical writers of his day. Deputy-Surgeon-General George MacKay, of the Indian Army, died November 20, aged 80. He received his earlier education in Ontario, Canada, where his father was stationed as major in a British regiment. Professor Ollier, the eminent French surgeon, died at Lyons, November 26. Dr. Durand, of Gros, has recently died, one of the earliest writers on hypnotism, his first work dating from 1855. His chief works were written over the pseudonym of "Dr. Philips." He published this year "New Researches on Ethics and Morals." At one time he was a naturalized citizen of the United States, but returned to France in 1860. Dr. G. Hartlaub, of Bremen has died, in his 87th year. He had won world-wide fame as an authority on ornithology.

PRECAUTIONS AGAINST TUBERCULOSIS IN GERMANY.

The Department of the Interior of that empire has just given out the following instructions, according to report of Consul J. F. Monaghan: 1. Professional women who lay out the dead must report at once in writing to the police authorities if said person died of tuberculosis of the lungs or tuberculosis of the larynx. Should the deceased have been treated shortly before his death by a physician, the physician has to state the cause of death on the death notice at the request of the laying-out woman. This notice, with all the facts, must be handed in to the police before the person is buried. 2. Doctors must under all circumstances where they have patients with lung or larynx tuberculosis give a written notice to the police. Should they consider that the sick person endangers other persons, they must give written notice to the police. 3. All cases of lung or larynx tuberculosis in private institutions for the sick, orphan asylums, poorhouses, workhouses, hotels, and lodging-houses of all kinds must be reported by the attending physician to the police. Should there be no physician in attendance, the owner, keeper, or person in charge of the above-named institutions must report the same to the police within three days after the same has come to his notice. 4. The police are forced, as soon as they are notified of the death of a person suffering from lung or larynx tuberculosis, to have the room and articles belonging to said person disinfected as soon as the body is transferred to the house in the cemetery, where it must lie twenty-four hours before being buried. In case of persons suffering from lung or larynx tuberculosis, the room and effects of said person must be disinfected as soon as he is transferred to another place. In carrying out the disinfection, any recommendations of the physicians should be observed. It is recommended that the police in disinfecting proceed under the direction of the district physician. The cost of disinfection is to be paid out of the town or city treasury in case the person who has died or is suffering from lung or larynx tuberculosis is too poor to pay the same. The notices of such cases or copies of the same must be sent as soon as possible by the police to the district physician; also all facts or remarks relating to the same. Any person disobeying the regulations cited in paragraphs 1, 2, and 3 shall be subject to a fine of 150 marks ($35.70) or imprisonment up to six weeks.

LONDON LETTER.

A REMARKABLE CASE OF TRANCE.

A case of trance is under observation at the Royal Infirmary, Newcastle, which is declared to be unprecedented in English medicine. Dr. Drummond gave a demonstration on the patient to a large number of physicians. He is a clerk, aged 26, who through life has been of a reserved and depressed nature and regarded as eccentric. In March he became unconscious. For seven months he has lain in a state of profound stupor, without any movement. He swallows unconsciously. But his unconsciousness was not as complete as was supposed, for now while on the road to recovery he remembered certain events which had occurred. The strongest electric current failed to elicit any response. At first he lost flesh and became a "living skeleton." He was then fed by injections, later the stomach-pump was used, and finally he was fed in the ordinary way.

DEATH FROM THE USE OF ROENTGEN RAYS.

A remarkable case has just occurred in which death is alleged to have been due to the use of Roentgen rays. A woman aged 68, while riding a bicycle, met with an accident resulting in an intracapsular fracture of the neck of the femur. In order to diagnose the exact nature of the injury the Roentgen rays were employed, and two exposures of 35 and 45 minutes were given on April 7 and 27, respectively, with a 10-inch coil and 5½-inch spark. After the second exposure an eruption appeared on May 5. A gangrenous slough 6 inches in length and 3 inches in width, with a surrounding zone of inflammation, formed on the abdomen. Death took place November 5. According to the medical evidence at the coroner's inquest, the cause was exhaustion from shock, the result of fracture of the thigh and the action of Roentgen rays. No other cause of death could be found at the post-mortem examination. At the time of death the slough had been cast off, leaving a healthier surface, which, however, showed little sign of repair. The fracture did not unite. The heart was flabby and thin. The jury returned a verdict, "that the deceased met her death from shock and exhaustion following the accident and the effects of the Roentgen rays on a weakened system; no blame is attached to either the doctor or the photographer."

LATE SYPHILITIC PYREXIA—INTERMITTENT ESSENTIAL FEVER OF SYPHILIS.

At the Clinical Society, Mr. Campbell Williams reported a case of this comparatively unrecognized condition. A man aged 43 contracted syphilis in December, 1896. After the secondary stage he suffered from little except a sore tongue. He was treated mainly with mercury alternated with iodids for a period of two years, and was free from all symptoms for eighteen months before ceasing attendance. In April, 1900, he had periostitis of the right clavicle, and pyrexia. His temperature rose every afternoon, and the crisis took place in the small hours of the morning. Syphilitic fever was diagnosed and he was put on mercury. On April 25 his temperature became normal and had remained so ever since. In the discussion which followed, Dr. Sidney Phillips remarked that such cases were by no means uncommon and referred to one which he had recorded in the Transactions of the Medical Society of London. In another case under his care, a woman who had contracted syphilis ten years previously, developed pyrexia such that might be mistaken for malarial fever. Some years ago a case was reported by the late Dr. J. S. Bristowe of a man who had intermitting pyrexia of obscure origin, until syphilitic choroiditis was discovered in the eyes. Mercury was then given and the patient recovered. Dr. T. D. Savill also agreed that such cases were not uncommon and was surprised that the fact was not recorded in text-books.

DIAGNOSIS AND TREATMENT OF THORACIC ANEURYSM.

At the Medical Society of London, Dr. De Havilland Hall read a paper on this subject. He commented on the difficulty of diagnosis at the onset when physical signs were very obscure. He pointed out that a harsh, clanging cough in a middle-aged man with atheromatous vessels and a syphilitic history were very suggestive of aneurysm. He laid stress on the frequency of recurrent laryngeal paralysis, especially on the left side, and emphasized the importance of systematic laryngoscopic examination in obscure cases of intrathoracic mischief. This examination was necessary as a routine since unilateral abductor paralysis was compatible with a practically unaltered voice. Of 41 cases of aneurysm which he had seen, 22 presented hoarseness and 19 paralysis of one or other vocal cord, usually the left. He alluded to the paroxysmal nature of the dyspnea. Tracheotomy was generally useless, as the main cause was pressure on the trachea. He regarded the diastolic "thud" as the most reliable auscultatory sign of aneurysm, the presence or absence of a murmur being of comparatively small importance. The combination of loud tracheal breathing and dysphagia pointing to pressure on the trachea and esophagus was very suggestive of aneurysm. The Roentgen ray promises to be of great service in diagnosis.

As to treatment, the cases subjected to the Tufnell method required to be carefully selected. He was not in favor of restricting the diet to the quantity advised by Tufnell. He found that restriction to 10 to 12 ounces of solids and from 12 to 16 ounces of liquids was sufficient. Under this plan drugs should be avoided. He had tried subcutaneous injection of gelatin in one case, which was not benefited.

ARSENICAL POISONING IN MANCHESTER FROM BEER-DRINKING.

The extraordinary and unprecedented outbreak of arsenical poisoning in Manchester and the surrounding district, owing to contamination of beer with arsenic, has produced a profound sensation throughout the country. For some time the doctors in Manchester and the neighboring town of Salford have noticed that the number of cases of "peripheral neuritis" has been rapidly increasing. Recently they reached alarming proportions. Increased drinking in connection with the elections and rejoicings over the British successes in South Africa was thought to be the cause. But soon it was noticed that the cases presented unusual features. Large numbers were observed in the various infirmaries and they swarmed in the outpatient departments of the hospitals. The patients were beer-drinkers who sought advice on account of weakness and sensations of "pins and needles," numbness, pricking, scalding, etc.,

in the limbs. In advanced cases they were paralyzed and unable to get about. Others were seen for various rashes; erythematous, papular desquamation and keratosis of the palms and soles. Sweating was marked in some cases. In others the patients complained of colds in the head or nose, or influenza, or they became hoarse. Only a few gave a history of nausea and vomiting. The superficial reflexes were often found increased, even in chronic cases. The knee-jerks were usually diminished or abolished, but in some severe cases they were increased. Diarrhea was exceptional. For a time these patients were supposed to be suffering from alcoholic multiple neuritis, until Dr. E. S. Reynolds, assistant physician to the Manchester Royal Infirmary, discovered that arsenic was present in the beer which they drank. He announced this at the meeting of the Medical Society of Manchester on November 21. This outbreak of arsenical poisoning has been widespread in the district for two months and there is strong evidence to show that cases began as long ago as six months. In the beer, arsenic has been found in quantities varying from trace up to 0.28 grams per gallon. In the sugars used as malt substitute for brewing, 3 and 4 parts of arsenic per 10,000 were found. The source of the arsenic is the sulphuric acid used to prepare these sugars from cane sugar and starch. Sulphuric acid is made from arsenical pyrites, and therefore contains arsenic as an impurity. The greatest precautions are now being taken. Beer is being subjected to analysis all over England, and the government has ordered an inquiry into the matter. Immense quantities of beer have been thrown away. The Manchester coroner has warned all publicans that they are responsible for the purity of their beer and that if a death should occur they will be held responsible.

THIRD PAN-AMERICAN MEDICAL CONGRESS.

The following circular has been issued: The organization committee has postponed the meeting of the Third Pan-American Medical Congress until February 4. It will be held from that date until the 7th, inclusive. All literature pertaining to the Congress is in Spanish, but occasional news items will be sent to the weekly journals. Delegates can go either by the land routes, which are all via Florida, or by the water route from New York. Full particulars concerning these routes, excepting that of the Ward Line steamer from New York, will be found in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of November 3. Those coming from south of Washington and west of Pittsburg will probably select the Florida route, while those from the northeast will find the Ward Line more convenient. The steamer *Seguranza* of the Ward Line leaves New York January 30, arriving in Cuba on February 3, the day before the beginning of the Congress. The new Ward Line steamer *Morro Castle*, holding 135 cabin passengers, leaves Havana on February 9, reaching New York February 11. The round trip, everything included, is $60. Those going via this route will be absent from New York twelve days.

Any of the delegates going by the Ward Line, who desire it, may, by a supplementary payment of $25, return via Santiago. This trip will take from ten to twelve days, during which time the passengers live on the ship, and have their meals there if they desire. The party goes from Havana by rail to Cienfuegos in one afternoon, there taking the steamer to Santiago, and from Santiago to Nassau in the Bahamas, and from Nassau to New York. The stay in these different ports will be for a day or more.

English-speaking members of the Cuban reception committee will meet all steamers on their arrival in Havana and escort the delegates to the hotels assigned to them. The best hotels in Havana are, Telegrafo, Mascotte, Inglaterra and Pasajo. Rates, $3 and $5 a day.

The entertainment committee, appointed by the city council of Havana, for the purpose of making it pleasant for the delegates during their stay, have arranged a program which, although as yet not fully determined on in every detail, is nevertheless one which adds an attractive feature to the meeting.

There will be a large ball given at the Tacon theater. This will be under the management of a sub-committee and an auxiliary ladies' committee. The committee is sparing no pains to make the ball the great social feature of the week, and one that will be most enjoyable, not only to the delegates, but also to any ladies in their parties. (There will be a banquet given at the same place.) On another day an excursion will be made to the sugar plantation of Mr. La Costo, near Havana, on three government transports. On arriving there the delegates will be shown the manner of growing sugar cane, gathering it, grinding, cooking and refining the sugar derived therefrom, as well as all other points of interest connected with the method of making sugar, and life on a sugar estate. Refreshments will then be served either on the estate or on the transports returning. These transports will be so arranged for the guests as to give the greatest amount of comfort and pleasure during the trip. On another day there will be a parade of the police and an exhibition of the fire companies, in which they will show the promptness and skill with which they combat any fires taking place in the city. Receptions will also be given by various officials, and private dinners by numerous Cuban physicians to the delegates with whom they are acquainted.

The three general sessions of the Congress at which papers of general interest will be presented and addresses delivered by official representatives from the different countries, will be held at the Tacon theater in Havana. The section meetings will be held in the university on the first floor, and on the first and second floors of the Institute. The delegates from Mexico are at present in the lead, and a large number of abstracts have been received from them.

Mention will here be made of the names of the presidents of the different sections, all Cubans, as the presidents are representatives of the country in which the Congress takes place, and the secretaries for the United States. All communications and titles of papers should be sent to the United States secretary of the section covering the subject, or to the associate secretary for the United States of the Congress, Dr. Ramon Guitéras, 75 West 55th street, New York City. A preliminary program will be published shortly.

SECTION OFFICERS.

The officers of the different sections are the following:

General Surgery, Dr. Tomas Plascencia, president; Dr. W. P. Nicholson, Atlanta, Ga., secretary.

Medical Jurisprudence, Dr. Jose M. Cespedes, president; Dr. H. A. West, Galveston, Tex., secretary.

Anatomy, Dr. Federico Horsman, president; Dr. A. D. Bevan, 100 State street, Chicago, secretary.

Orthopedic Surgery, Dr. Tomas Plascencia, president; Dr. John Ridlon, 103 State street, Chicago, secretary.

Obstetrics, Dr. Eusebio Hernandez, president; Dr. Gustav Zinke, 13 Garfield place, Cincinnati, Ohio, secretary.

Pediatries, Dr. Joaquin L. Duenas, president; Dr. I. N. Love, 49 West 44th street, New York City, secretary.

Ophthalmology, Dr. Enrique Lopez, president; Dr. John E. Weeks, 40 East 57th street, New York City, secretary.

Otology, Dr. Carlos Desvernine, president; Dr. J. F. McKernon, 62 West 52d street, New York City, secretary.

General Medicine, Dr. Carlos Finlay, president; Dr. Judson Daland, 317 South 18th street, Philadelphia, secretary.

Physiology, Dr. M. Sanchez Toledo, president; Dr. A. P. Brubaker, 105 West 34th street, Philadelphia, secretary.

Pathology, Dr. Raimundo Castro, president; Dr. A. E. Thayer, 352 West 117th street New York City, secretary.

Railway Surgery, Dr. Tomas Plascencia, president; Dr. Duncan Eve, 700 Church street, Nashville, Tenn., secretary.

Medical Pedagogy, Dr. Manuel Delfin, president; Dr. Otis K. Newell, 13 Central Park, west, New York City, secretary.

Therapeutics, Dr. Raimundo Castro, president; Dr. Hobart A. Hare, 222 South Fifteenth street, Philadelphia, secretary.

Gynecology and Abdominal Surgery, Dr. Gabriel Casusa, president; Dr. H. P. Newman, 103 State street, Chicago, secretary.

Mental and Nervous Diseases, Dr. Gustav Lopez, president; Dr. Charles P. Hughes, 3857 Olive street, St. Louis, Mo., secretary.

Dermatology and Syphilography, Dr. Henry Robelin, president: Dr. A. Ravogli, 5 Garfield place, Cincinnati, Ohio, secretary.

Dental and Buccal Surgery, Dr. Erastus Wilson, president: Dr. Eugene Talbot, Columbus Memorial building, Chicago, secretary.

Laryngology and Rhinology, Dr. Carlos Desvernine, president: Dr. G. H. Makuen, 1419 Walnut street, Philadelphia, secretary.

Military Medicine and Surgery, Dr. Eugene Sancho Agramonta, president; Maj. Jefferson Kean, U. S. A., Quemados, Cuba, secretary.

Marine Hygiene and Quarantine, Dr. Luis Cowley, president: Dr. H. M. Woodward, surgeon, M. H. S., Washington, D. C., secretary.

General Hygiene and Demography, Dr. Vicente de la Guardia, president; Dr. Alvah H. Doty, Quarantine Station, Staten Island, N. Y., secretary.

TRANSPORTATION.

Dr. H. L. E. Johnson, Washington, D. C., chairman of the transportation committee, makes the following announcement: The Southeastern Passenger Association has granted stop-over privileges in Florida to return passengers from the Third Pan-American Congress at Havana, within the time limit of tickets. The customary stop-over methods pursued in the case of winter tourists' tickets must be followed. Stop-over pasters and receipts for tickets must be obtained by all passengers desiring to take advantage of the privilege. Delegates and other passengers for the occasion should consult their local ticket agents for further information on this point.

In regard to railroad rates from Chicago the following may be announced: The rate from Chicago to Havana and return is $74.95, including meals and berth on steamer from Tampa or from Miami, Fla., to Havana and return to these places. Passengers may go from Chicago by various routes. It will probably be arranged to have a party from Chicago go over one route and back another. Correspondence with those living in, and west of, Chicago is desired by the editor of THE JOURNAL, so that definite arrangements may be made in time.

REQUEST OF SECRETARIES.

Dr. William Perrin Nicholson, Atlanta, Ga., secretary of the Section on General Surgery, requests those desiring to read papers before his Section to send the titles of their papers to him at the earliest possible moment.

Dr. G. Hudson Makuen, 1419 Walnut street, Philadelphia, secretary of the Section on Laryngology, urges the laryngologists and rhinologists of the United States to attend the congress. He requests the titles of the communications which they desire to present.

Major J. R. Kean, Columbia Barracks, Cuba, secretary of the Section on Military Medicine and Surgery, hopes that medical men with military experience will contribute papers illustrating all the many phases of this important and interesting branch of professional work. Contributions should be mailed to him as promptly as may be practicable.

Dr. Henry Parker Newman, 103 State street, Chicago, Ill., secretary of the Section on Gynecology and Abdominal Surgery, announces that he would again urge those who have papers in preparation for his Section to send abstracts, not to exceed 300 words, at once to the local secretary, Dr. Tomas V. Coronado, 105 Prado, Havana, Cuba, so that they may have a place on the preliminary program.

Dr. R. M. Woodward, surgeon, Marine-Hospital Service, Washington, D. C., secretary of the Section on Marine Hygiene and Quarantine, announces that it is desired that his Section be well represented. He has already received notices from several men prominent in sanitary affairs, signifying their intention to attend the meeting. He will be glad to furnish all necessary information to anyone interested in the subject and will see that abstracts of papers are sent to the committee in Havana if sent to him before January 20.

Correspondence.

Foreign Bodies in the Ear.

PHILADELPHIA, Dec. 11, 1900.

To the Editor:—In an abstract, from *Le Presse Médicale*, Paris, of an article by M. Lermoyez, the author says "that hundreds of lives would be saved every year if physicians, parents and nurses realized that a foreign body in the ear does no harm as long as it is not meddled with, etc." To any physician having a considerable experience with foreign bodies in the ear, such a statement will appear quite as ridiculous as it is untrue. In fact, the whole paragraph would indicate the writer to be a timid neophyte, whose first attempt in this line had resulted in nothing less than the tragic demise of his suffering patient at the hands of the trembling operator, whose death-dealing instrument had pierced some vital spot.

In no cavity of the body, scarcely excepting the orbit, is a foreign body, if allowed to remain, capable of producing more harm and greater distress than that of the ear, especially if lying close to the tympanic membrane; even inspissated cerumen, if mingled with dust and other extraneous matter, as it generally is, will produce in a short time very unpleasant subjective symptoms, and inspection will show more or less dermatitis with inflammation and swelling of the drumhead, not to mention deeper involvement if any considerable time has elapsed.

What physician has not seen the most violent and even grave symptoms following the retention of insects and other foreign bodies in the ear? And he, including M. Lermoyez, who would advise non-interference in such cases, is either criminally negligent of plain duty or too timid to practice medicine.

With a strong light and in gentle, but steady fingers nothing is so good for the extraction of any foreign body as a silver probe, flattened into a little spatula at one end, which is bent to an angle of about 45 degrees with the shaft. This can be carefully insinuated behind the object and generally withdrawn at the first effort. After this, gentle syringing with warm boric acid solution and carefully drying, leaves the meatus in the best condition for prompt recovery from any damage already sustained.

G. A. HILL, M.D.

Natural Asepsis.

SOCORRO, N. M., Dec. 15, 1900.

To the Editor:—One day last summer I was called to see a country maiden lady, 40 years of age, who had six weeks before, while walking in the barn-lot, stepped on a thorn, which ran through her shoe and into her foot, entering between the metatarso-phalangeal joints of two of the toes. It was poulticed with home-made mixtures for a few days and healed without the slightest suppuration. Four weeks after this a small, hard tumor appeared on top of the foot, pain was also noticed when patient put the foot to the floor. I made a small incision over the tumor and, on slight pressure, the thorn came out. Not the slightest indication of pus. Wound of knife healed primarily. The patient then stated, and her reputation for truth is beyond question, that there had never been a drop of pus form in her body; that wounds always healed by primary union or, if very much lacerated, the unnourished part mummified and dropped off. Thorns in her flesh became encased in a bone-like deposit and remained so until removed. She is a small, poorly-nourished woman, but fairly healthy. Did any one ever hear of a similar case?

J. F. STONG, M.D.

Marriages.

FRANCES PEELE, M.D., to George P. Beebe, both of Brooklyn, N. Y., December 8.

SAMUEL C. MUIR, M.D., to Miss Nancy Sharpe, both of Bardstown, Ky., December 6.

WILLIAM L. MCLAIN, M.D., to Miss Kate Cravens, both of Scottsburg, Ind., December 5.

BASIL D. SPAULDING, M.D., to Miss Margaret A. Cannon, both of Richmond, Va., December 4.

PAULUS A. IRVING, M.D., Richmond, Va., to Miss Lucy Taylor, of Orange County, Va., December 12.

LAFAYETTE BENNETT, M.D., Auburn, Logan County, Ky., to Miss Annie Means Braden, of Hopkinsville, Ky., December 19.

WILL M. GARTON, M.D., U.S.N., to Miss Beatrice S. Farquhar, daughter of Rear-Admiral Farquhar, U.S.N., at Washington, D.C., December 12.

Deaths and Obituaries.

Ephraim Ingals.

When Ephraim Ingals died higher medical education lost one of its most steadfast advocates; the West a pioneer, and Chicago one of its best-known and best-beloved physicians. He was born at Abington, Conn., May 26, 1823, son of Captain Ephraim and Amasia Goodell Ingals. His ancestor, Edmund Ingals, came to America in 1628, and was the first settler of Lynn, Mass. At the age of 14, young Ingals came to Illinois and lived with his brother in Lee County. He attended school

at Princeton one winter, later was a student at Mount Morris seminary, and then took a two years' course at Illinois College, Jacksonville. He taught school two winters, working on the farm during the summers. He began the study of medicine at Rush Medical College in 1845, was a special student in Dr. Brainerd's office, and was graduated in 1847. After graduation, he settled in Lee Centre, Lee County, Ill., and started in practice with Dr. R. F. Adams. Here he remained, living the hard life of the frontier physician, practicing medicine, farming, buying and selling land for ten years, when he came to Chicago, where he afterward made his home. Shortly after his return, he was made associate editor with Dr. Brainerd of the *Northwestern Medical and Surgical Journal*. In 1859 he was appointed professor of materia medica and medical jurisprudence in Rush Medical College and a member of its board of trustees, and these positions he held until 1871, when he resigned. He again accepted the position of trustee of the college in 1896, and was made emeritus professor of materia medica and medical jurisprudence. In 1897, when the college was about to be affiliated with the University of Chicago he made a donation of $25,000 toward the liquidation of the debts of the college. He also endowed the Ingals professorship of therapeutics and preventive medicine. He was greatly interested in the advance of medical education and more particularly as regards the affiliation of medical colleges with universities, which he believed could make it possible for the college to accomplish much more than without that aid. He also gave $10,000 in aid of the laboratories of the Northwestern University Medical School. He was a member of the AMERICAN MEDICAL ASSOCIATION, of the Illinois State Medical Society, of which he once was president, and of the Chicago Medical Society, of which he was a life member and three times president. About ten years ago he gave up active practice. Three years later he began to develop symptoms of weak heart. From that time he had no serious illness, although he was frequently ill and confined to the house for several weeks at a time. He had had, however, at intervals, Cheyne-Stokes respiration for five years. On December 5 he was attacked with what appeared to be influenza, attended by marked Cheyne-Stokes respiration. After a few days the symptoms of heart-weakness increased, and on December 9 he had a severe attack of angina pectoris *sine dolore*, and seemed hardly able to live through the night. During the next three days he had three or four similar attacks a day which were checked by remedies in a short time. He then rallied for three or four days. He had a cough that was continuous, but not particularly troublesome, with slight fever. On December 15 he had a relapse and grew steadily worse, but had a fairly comfortable night December 17. The next morning his pulse was regular, with slight rise in temperature and rapid respiration. At 9:20 he took some milk, and answered questions intelligently. Almost immediately the nurses noticed his pulse was weak, and in a few minutes he died. He looked upon his life-work as done and deprecated any efforts made to prolong his life, feeling that he had earned the right to rest.

EDWARD A. SMITH, M.D., in New York City, where he had lived since 1878, on December 10, aged 70. After graduating from the University of Pennsylvania medical department he became assistant physician in the Worcester (Mass.) State Lunatic Asylum. In 1856 he occupied a like position in the Pennsylvania Hospital for the Insane at Philadelphia. Six years thereafter he resigned to become a surgeon U. S. V. on hospital duty in the same city. After the Civil War he entered upon private practice and at last went to New York. Here for several years he was closely identified with the New York Orthopedic Dispensary and Hospital as trustee, treasurer and finally as vice-president.

CHARLES SABIN TAFT, M.D., at his home in Mt. Vernon, N.Y., December 18, aged 65, with cancer of the throat. He was stationed at Washington during the Civil War and was present in Ford's theater when Lincoln was assassinated. He and Mrs. Taft occupied orchestra seats just below the president's box and Dr. Taft was the first surgeon to reach the dying president, with whom he remained until the end.

WILLIAM P. CALWELL, M. D., Washington University, Baltimore, 1867, suddenly at White Sulphur Springs, Greenbrier County, W. Va., December 8, aged 62. He was a son of Dr. Henry Calwell, of the family so long associated with the ownership and management of the Greenbrier White Sulphur Springs.

JOHN C. ACHESON, M.D., College of Physicians and Surgeons, New York, 1859, at his home in New York, December 12, aged 68. He was among the physicians first appointed by the New York health board as at present organized, was a frequent medical society attendant and was active in dispensary work.

CASSIUS C. DAVIDSON, M.D., Western Reserve University, Cleveland, 1876, after an illness of three weeks, at his residence in Akron, Ohio., December 9, aged 50. His fellow practitioners adopted resolutions deploring his death and expressing sympathy with his family.

WILLIAM H. JONES, M.D., University of Pennsylvania, 1858, in Bethlehem, Pa., December 13. In 1873 he was commissioned surgeon on the *Portsmouth* at San Francisco and Philadelphia, and later was stationed at the League Island navy yard, Philadelphia.

LEROY J. BROOKS, M.D., Bellevue Hospital Medical College, New York, 1872, at Norwich, N. Y., December 11, from chronic

nephritis. He was a well-known physician of Chenango county and a member of the AMERICAN MEDICAL ASSOCIATION.

HENRY T. WOODRUFF, M.D., Northwestern University Medical School, 1861, surgeon of the 100th Illinois during the Civil War, died at his home in Harvard, Ill., from Bright's disease, December 17, aged 61.

JOSEPH T. SHOEMAKER, M.D., University of Pennsylvania, 1860, at Philadelphia, December 6, aged 62 years. During the Civil War he served as surgeon of the 88th Pennsylvania Volunteer Infantry.

WILLIAM H. DAUGHTRY, M.D., University of Pennsylvania, 1865, formerly president of the Franklin Agricultural and Mechanical Society, at Sunbeam, Southampton county, Va., December 14.

WINONA JENNINGS, M.D., Laura Memorial Woman's Medical College, Cincinnati, 1899, at the Cincinnati Hospital, December 13, after a lingering illness, the result of a series of operations.

GEORGE C. ROBERTS, M.D., Atlanta Medical College, 1887, a resident and late city physician of Chattanooga, at Memphis, Tenn., December 3, after an illness of two weeks, aged 43.

ELLIOTT BARTON PALMER, M.D., Medical College of Ohio, Cincinnati, 1896, at his home in Avondale, Cincinnati, from influenza complicating heart disease, December 10.

ORLANDO J. HARRAN, M.D., Northwestern Medical College, St. Joseph, Mo., 1890, at his home in West Beatrice, Neb., after a brief illness, December 10, aged 77.

FREDERICK C. W. PLEIBEL, M.D., University of Pennsylvania, 1862, at the German Hospital, Philadelphia, December 6, after a brief illness, aged 66.

O. K. EARLY, M.D., surgeon of a Kentucky brigade in the Confederate service, at his home in Columbus, Miss., after a short illness, on December 11.

JAMES FLEURY STEWART, M.D., junior resident physician at the S. R. Smith Infirmary, New Brighton, N.Y., from typhoid fever, aged 23 years.

FREDERICK A. HOPKINS, M.D., McGill University, Montreal, 1889, instantly, by being struck by a train at Montreal West, December 1, aged 34.

KIRK C. MCKINNEY, M.D., Kansas City Medical College, 1896, from gunsot wound self-inflicted, at El Paso, Texas, December 8, aged 29.

FRANK SCOTT HARKER, M.D., Medical College of Virginia, 1892, at his home in Richmond, Va., after a short illness, December 8, aged 42.

JAMES H. MCDANIEL, M.D., University of Louisville, 1870, at his home, Centreville, Texas, after a long illness, November 26.

ADOLPH F. KRAUSE, M.D., Rush Medical College, 1895, suddenly, during an epileptic attack at Bowdle, S.D., December 5.

RANDOLPH N. HOWARD, M.D., Jefferson Medical College, 1879, suddenly from heart disease at Carrington, N. D., December 7.

P. L. HUDSON, M.D., University of Georgia, 1877, at Cochran, Ga., from an overdose of chloroform, November 30.

JOHN IGNATIUS GROSS, M.D., University of Maryland, 1865, suddenly, from heart disease, December 14, aged 61.

J. PERRIN JOHNSON, M.D., University of Cincinnati, 1860, at his home in Sioux City, Iowa, December 9, aged 72.

ADOLPH PRAMANN, M.D., University of Wurzburg, Germany, 1856, at his home in New York, aged 68 years.

SAMUEL C. TISDALE, M.D., University of Louisville, 1887, at his home, Port Lavaca, Texas, December 4.

J. S. ZUKOSKIE, M.D., University of Poland, 1867, died near Ensley, Mich., November 14.

W. G. BIGELOW, M.D., Stormstown, Pa., at Du Bois, Pa., November 28, aged 87.

A. B. KARTERMAN, M.D., at Hepler, Upper Mahantongo Township, Pa.

Book Notices.

PANAMA AND THE SIERRAS: A Doctor's Wander Days. By G. Frank Lydston, M.D. Illustrated from the author's original photographs. Price, $1.75. Chicago: The Riverside Press. 1900.

If there is anything in a name, the title of this book ought to insure it a successful "run." This does not mean that all there is to it is the poetical title. Far from it. There is not a page but is interesting and some of the descriptions are beautiful word pictures, showing that the author, besides his other gifts, has that faculty which few writers possess—the ability to describe a scene or an occurrence so that the reader can see it as the observer saw it. Lydston takes a trip to his birthplace in California by way of New York, and is snowbound on the way; to Cuba; across the Isthmus of Panama; up the Pacific coast to San Francisco; and, after a ramble through California, home. He takes the reader with him and shows him what he saw—by photographs "taken on the spot," and by his happy way of describing occurrences and places. He visited many and various towns—on the way South, in Central America, and going North—and kept his eyes open and let nothing escape him. Consequently, he had much to tell and tells it in Lydston's style. While he did not intend to do so, he has made his book instructive, and so the time spent in reading it will not be thrown away. But it is also interesting and entertaining, and this is what he intended it should be. While "Panama and the Sierras" is not as pretentious a volume as "Over the Hookah," nor possibly as deserving of praise from the literary point of view, yet it is one that will add luster to the author's name and insure his right to be placed among that steadily increasing class—The Physician in Literature.

THE PHYSICIAN'S VISITING LIST (Lindsay and Blakiston's) for 1901. Fiftieth Year of Its Publication. Price, $1.00. Philadelphia: P. Blakiston's Son & Co.

As the title-page indicates, this handy little book completes with this year its half century of usefulness. It is in convenient, pocket form, and neatly but substantially bound. It contains: calendar, metric system, table for converting apothecaries weights and measures into grams, dosage table, notes on asphyxia and apnea, comparison of thermometers, and obstetric table. The blank leaves are for visiting list, memoranda, addresses of patients and nurses, accounts asked for, wants, engagements, record of births and deaths, cash accounts, etc.

THE MEDICAL NEWS VISITING LIST. 1901. Thirty Patients per Week. Leather; pp. 192. Price, $1.25. Thumb-letter index, 25 cents extra. Philadelphia and New York: Lea Brothers & Co.

This annual volume, which is indispensable in its way to every practitioner, has been very neatly gotten out by Lea Brothers, containing an arranged visiting list with the usual accessories, dosage table, poisons and their antidotes, method of examination of urine, a comparative table of the different thermometers and scales, and a table of weights and measures, with also surgical directions as to certain operations, such as ligation of arteries, and a list of remedies for all the disorders commonly met with. The book altogether is conveniently arranged. The thumb index for the departments is a feature which enhances its convenience.

HEART DISEASES IN CHILDHOOD AND YOUTH. By Charles W. Chapman, M.D. Durh., M.R.C.P. Lond., Physician to the National Hospital for Diseases of the Heart. With an Introduction by Sir Samuel Wilks, Bart., M.D., F.R.S., Physician Extraordinary to H. M., the Queen. Cloth; pp. 98. Price, 3s. 6d. London: The Med. Publishing Co., Ltd.

This little book is offered to the medical public as containing an account of the more common forms of cardiac affections as they occur in young persons. The author has omitted a consideration of the acute cardiac disorders which are for the most part complications of the general febrile states, such as rheumatic fever, and are therefore only incidentally touched upon. The book is largely made up of case records, with critical remarks appended, and it will be found an instructive work for reading by the general practitioner. Special attention is given to certain questions, such as education, sports, etc., in children, which are practical points whose inclusion will be appreciated. We agree with Sir Samuel Wilks in the introduction when he says the author has produced a book of great interest and value.

Association News.

Research Fund.

The Committee on Scientific Research of the American Medical Association desires to announce that it has available the sum of five hundred dollars for the assistance of researches to be undertaken in the next six months, and that the money will be appropriated if applications be received within the month of January, 1901. Applicants should state clearly the character of the research to be undertaken, and the facilities at their command. Address Dr. H. C. Wood, chairman, 1925 Chestnut street, Philadelphia.

Societies.

Western Surgical and Gynecological Association, Minneapolis, Minn., Dec. 27-28.
Medical Association of Nevada, Reno, Jan. 7, 1901.
Pan-American Medical Congress, Havana, Cuba, Feb. 4, 1901.
Tri-State Medical Association of the Carolinas and Virginia, Richmond, Va., Feb. 26, 1901.

THE MARYLAND OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY, at its annual meeting, elected Dr. Hiram Woods president and Dr. Henry O. Reick secretary-treasurer.

THE KEOKUK (Iowa) MEDICAL SOCIETY has been reorganized and has elected the following officers: Dr. Wilson W. Holmes, president; Dr. R. K. Taylor, vice-president, and Dr. Horace A. Kinnaman, secretary.

THE KENOSHA COUNTY (Wis.) MEDICAL ASSOCIATION met at Kenosha, December 6, and elected Dr. William R. Cheever, president; Dr. Helen Harbert, vice-president; Dr. Paul P. Jorgensen, secretary, and Dr. George T. Kimball, treasurer.

THE SIOUX CITY (Iowa) MEDICAL ASSOCIATION was organized December 7, with the following officers: Dr. George Schott, president; Dr. Van Buren Knott, vice-president; Dr. Marshall E. Silver, secretary, and Dr. John N. Warren, treasurer.

THE SUMMIT COUNTY (Ohio) MEDICAL SOCIETY met at Akron, December 4, and elected Dr. Herman C. Thiess, Akron, president; Dr. Ezra H. Tobias, Inland, vice-president; Dr. Edward A. Montenyoli, Akron, secretary, and Dr. Charles E. Norris, Akron, treasurer.

THE MONTGOMERY COUNTY (Ohio) MEDICAL SOCIETY held its annual meeting at Dayton, December 7, and elected Dr. John S. Beck, president; Dr. Francis C. Gray, vice-president; Dr. Horace Bonner, secretary; Dr. David C. Lichliter, treasurer, and Dr. Duff W. Greene, censor.

THE DELAWARE COUNTY (Ind.) MEDICAL ASSOCIATION at its annual meeting held at Muncie, December 7, elected Dr. George R. Green, Muncie, president; Dr. Charles W. Smith, Selma, vice-president; and Dr. Ulysses G. Poland, Muncie, secretary and treasurer.

THE MINNESOTA VALLEY MEDICAL ASSOCIATION, whose twentieth annual meeting was noticed briefly in the last issue of THE JOURNAL, elected the following officers: Drs. Oliver H. McMichael, Vernon Center, president, Drs. W. S. Fullerton, Minnesota Lake, W. J. McCarthy, Madelia, and Jared W. Daniels, St. Peter, vice-presidents; Dr. George F. Merritt, treasurer, and Dr. Edwin D. Steel, Mankato, secretary.

THE ROCK COUNTY (Wis.) MEDICAL SOCIETY held its annual meeting at Janesville, December 8. The subject for discussion was "Erysipelas," and afterward the following officers were elected: Dr. James Mills, president; Dr. Samuel B. Buckmaster, vice-president; Dr. George W. Fifield, secretary; Dr. Ransom W. Edden, treasurer, and Dr. Quincy O. Sutherland, censor, all of Janesville.

THE INDIAN TERRITORY MEDICAL ASSOCIATION held its twenty-fourth semi-annual meeting at Muscogee, December 4, President Dr. Le Roy Long, Caddo, in the chair. In his address, the president recommended that plans be formulated to secure congressional legislation for an insane asylum for the Indian Territory and for a system of public health boards, and a committee was appointed to take these matters in charge. Vinita was selected as the place for the June, 1901, meeting of the society.

THE ORLEANS (La.) PARISH MEDICAL SOCIETY held a meeting, December 8, at which the following officers were elected. Dr. E. D. Denegre Martin, president; Drs. Herman E. Gessner, Louis G. LeBeuf and George Stumpf, vice-presidents; Dr. W. M. Perkins, recording secretary; Dr. Marion H. McGuire, treasurer and Dr. Sidney P. Delaup, librarian. These officers constitute the executive committee, and, with Drs. Henry D. Bruns, John Callan and Thomas S. Dabney, the board of directors. Dr. Marcus Feingold read an interesting report on the results of the examination of the eyes of 141 Jewish school children. Contrary to the common belief, hyperopia was more prevalent than myopia—a fact which explains the predisposition of the Jewish race to glaucoma. Syphilitic eye disease was entirely absent. Dr. W. M. Perkins exhibited a new plaster knife and demonstrated its application on a cast. The prominent features are: a heavy wooden handle and a strong blade, triangular on cross-section, sloping from back to edge so as to form a projecting point. The blade can be projected from or sunk into the handle by a screw.

Philadelphia Pathological Society.

Meeting Nov. 8, 1900.

President Dr. F. A. Packard in the chair.

DR. ARTHUR V. MEIGS read a memorial address on the death of Dr. Jacob M. Da Costa.

MECHANICAL IMPROVEMENTS.

DR. W. M. L. COPLIN exhibited an improved mechanical stage for Dölken's microscope, which he had devised. To this he had adjusted a wider mechanical stage for studying large serial sections, allowing a movement of 2½ inches horizontally. A fine adjustment may also be obtained. The speaker had also devised a drawing attachment with detachable colored glasses, which slip into the cylinder of the microscope through a slot; it is useful in making drawings. Its disadvantage, however, is that it can not be used with a fluid mount. He had also modified the older form of dissecting microscope so that the elbow of the instrument allows the lenses to be rotated horizontally without changing the focus up or down. The instrument also has the advantage of an extremely long arm, thus allowing for examination of embryonic specimens.

A POSSIBLE SOURCE OF INFECTION.

DR. M. P. RAVENEL devised a kind of nose-bag to be placed over the head of cattle so as to catch the mucus expelled by them. The nose-bag consisted of a piece of thick canvas with a rounded elbow of such size as to admit the apparatus being adjusted. It was divided into two compartments at the bottom by means of a wire screen so that on one side guinea-pigs could be placed and left exposed to the infective material ejected by the diseased cattle. He had at times examined certain solid particles coughed up by the infected cattle and found them loaded with tubercle bacilli. Of five animals he had made thirty-four examinations of such particles and found tubercle bacilli twenty times. Of forty guinea-pigs left exposed to the material ejected by these animals and confined in the nose-bag twenty became tuberculous.

XYGOTES OF PROTEOSOMA.

DR. ALBERT WOLDERT exhibited a specimen of middle intestine of anopheles infected with the xygotes of proteosoma Labbé, which had been loaned through the courtesy of Dr. Ronald Ross, of the Liverpool School of Tropical Medicine. The specimen had been obtained by Ross in 1898 during some of his earlier work in regard to the subject of the inoculation of malarial fever through the medium of mosquitoes. In this specimen there were upward of 200 xygotes. They could be plainly discerned with a low power lens, but studied to greater advantage with a 1/12 oil-immersion. With the oil-immersion they might be described as being cells more or less round in shape, having a thick, yellowish or hyalin capsule, and in the interior containing a few bright reddish pigment granules, and numerous fatty particles having a yellowish or hyalin tint. The protoplasm had a reticulated appearance and in a few localities slit-like vacuoles could be seen. The xygotes were located somewhat superficially and seemed to lie within the muscular layer of the middle intestine, that is, they were usually found lying on the epithelial cells of this organ. They were from two to three days old and ranged from 7 to 15 microns in size.

DR. SIMON FLEXNER saw recently in Cambridge, Eng., Dr. Nuttall's specimens showing the xygotes of the malarial parasite in all stages, in the middle intestine of the mosquito.

MICROSPORON FURFUR.

DR. M. B. HARTZELL made some remarks relative to the finding of the spores of the microsporon furfur in a case of tinea versicolor, and exhibited photomicrographs. Some writers had said that this organism did not invade the hair follicle, but in one case which he had recently examined and stained with gentian-violet he had been able to detect the spores extending downward throughout the hair follicle as well as in the horny layer. These findings were important from the standpoint of treatment.

PRESENTATION OF SPECIMENS.

DR. A. O. J. KELLY presented specimens from a man who had died of sepsis due to an injury of the bladder received several years ago. The bladder walls were almost an inch thick. The man was also suffering from ulcerative colitis.

DR. WM. G. SPILLER exhibited specimens stained by the Mallory method for neuroglia tissue.

DR. W. M. L. COPLIN exhibited a specimen of perforation of the esophagus. In this instance the opening was almost 2 inches in diameter.

Meeting Nov. 22, 1900.

President Dr. Frederick A. Packard in the chair.

GLIOMA OF RETINA.

DRS GEORGE E. DE SCHWEINITZ and EDWARD A. SHUMWAY reported two cases of glioma of the retina. Dr. De Schweinitz states that in Case No. 1 the posterior region of the eyeball was filled with a grayish mass, which also involved the optic nerve. In certain areas there were deposits of lime salts. In other regions were thick masses of cells, some of which had lost their staining properties. The blood-vessels were thickened and showed hyalin degeneration. The cornea was thin and showed staphyloma. None of the rosette formations described by Wintersteiner had been observed.

The second case was that of a boy who had been suffering for about a year. The anterior chamber was filled with the grayish mass. Stained with eosin and hematoxylin, one portion of the mass stained well, while others had lost this property. The sclera was infiltrated, lens cataractous. None of the masses showed the rosette formations which had been described. As to the etiology of this condition Virchow holds to the belief that they spring from the neuroglia cells. Wintersteiner lays stress on the rosette-shaped cells. He calls such formations neuro-epithelioma of the retina. Of 550 cases there had been metastases to the liver in 61 instances. Besides this locality metastasis had also occurred in the brain and mesenteric glands.

DR. SIMON FLEXNER stated that these formations differed considerably from what is known as tubular sarcoma. This is best studied when the tissue is mounted in glycerin. The rod and cone formation differs widely from that of sarcoma. He had examined a brain and found that the structure was the same as that stated elsewhere.

PARASITIC HEMOPTYSIS.

DR. CHARLES WARDELL STILES, Washington, reviewed the history of the subject and stated that Kerbert in 1878 in examining the lungs of a tiger found a peculiar parasite. In 1880 Manson also found a parasite of a similar kind in man. Writers in Japan and China had reported similar findings. Comparing these reports, it was found that the parasite which had been first found in animals and later in man, by many other observers, was identical. Examining the question further it was found that the parasite was what is termed *paragonimus westermanii*, which is very common among hogs in this country and is communicable to man. Post-mortem the disease might be mistaken for that of tuberculosis. It is essentially an Asiatic disease, and is very common in the Philippine Islands. The latter fact should cause the physicians of America to become acquainted with the condition, since there are now in those islands 65,000 soldiers, and it is safe to say that some of them will bring the disease home with them. Some believe that it is contracted by drinking contaminated water. The intermediate host has been proved to be a snail. As the disease mostly attacks the lungs the infectious agent is thrown off in the sputum, which should always be disinfected. The dry cuspidor should be employed, since it thrives in liquids. Dogs are also susceptible to the disease, and in eradicating it infected dogs should be destroyed. It has been proved that the parasite must first pass through a snail before it can infect man. In England the disease is termed parasitic hemoptysis, a term proposed by Patrick Manson. It is very common in Japan, Korea, China and in the Philippines, where there is a kind of endemic hemoptysis. As to its frequency it is stated that in Japan there are certain towns in which 15 per cent. of the inhabitants are infected. In other places it is believed 25 per cent. are infected. The speaker had collected 59 cases. Of these 45 persons affected had been between the ages of 11 and 30 years. In the majority of instances the disease occurred among men; 38 persons had been farmers, which may be accounted for on the nature of its cause. The disease is of a chronic nature and may last for 20 years. The treatment is absolutely hopeless. There may be some cough, slight fever and cough, hemoptysis with cavity formation. The disease can be quickly diagnosed by examining the fresh sputum, when the eggs of the parasite may be found. The eggs are oval or elliptical in shape with a more or less darkened extremity. The full-grown parasite is somewhat elliptical in shape, ½ inch long and probably ⅛ thick in the middle. It is greenish-white in color. While the disease occurs most frequently among hogs, cooking will always destroy the eggs of the parasite. On this account the government could not go so far as to have these infected animals killed. [See editorial comment in this issue. —ED.]

DR. HENRY BEATES believed the time was near at hand when the medical schools of this country should give a course in medical zoology.

EXHIBIT OF SPECIMENS.

DR. F. S. PEARCE presented a specimen of hemorrhage into the pons and crus, with paralysis. The symptoms were simply those of cerebral hemorrhage.

DR. JOSEPH MCFARLAND exhibited a specimen of intestine in which the patient died from intestinal obstruction from a Meckel's diverticulum which had been simply inverted into the gut. He also showed a detached thrombus which had formed in the auricle, and another which had formed in the ventricle of the heart.

Philadelphia Academy of Surgery.

Meeting held Nov. 5, 1900.

President Dr. De Forest Willard in the chair.

INFECTION BY THE AEROGENES CAPSULATUS.

DR. JOHN B. ROBERTS reported a case of infection by the bacillus aerogenes capsulatus in an open fracture of the radius and ulna. The patient last August fractured both bones of the forearm, one bone making a small opening externally. The fracture had been dressed antiseptically. Dr. Roberts had seen the case three days after the injury occurred, at which time there was a small focus of skin near the edge of the wound that had a gangrenous appearance. The wound was opened, the gangrenous area cut away, wound thoroughly drained, and afterward dressed. High fever followed a few days later, and tube casts were found in the urine. The wound was again examined, and it was found that the gangrenous process had extended higher up the arm, and amputation became necessary. The tissues had a crepitating feeling, as though a large amount of gas had formed in them. Two days after the amputation had been done, urticaria developed, and a small area of gangrene was on one of the flaps. The flaps were opened and the wound drained. Within a day or two the black gangrenous area became mummified. He had dissected the portion of arm removed and found that the blood-vessels had not degenerated, but clots were present in the arteries. Cultures had been made of the fluid from around the wound and smear preparations were also examined. In the former instance Drs. Flexner and Kneass had found pure cultures of the bacillus aerogenes capsulatus recently described by Welch. He believed that infection by this organism had occurred at the time of fracture.

DR. MILLER thought it was strange we did not see more cases of infection by this bacillus.

DR. ROBERTS, in reply to a question, stated that he was unacquainted with that form of rapidly spreading gangrene, such as seen during the Civil War, so that he could not answer the question definitely. He believed that there might be some relation existing between this form of gangrene reported and malignant edema.

DR. F. T. STEWART (by invitation) reported two cases of appendicular abscess in the left side, in one of which there was abscess of the lung and pyothorax.

DR. H. A. WILSON reported a case of fracture of the femur in an infant, with osteotomy for deformity. He further reported two other cases operated on by Dr. H. M. Sherman, of San Francisco.

The patient had been an infant three months of age, in which there was found marked fullness just below the great trochanter with apex pointing forward. There had been no shortening. On May 5 an incision showed that the mass was a large callus. Osteotomy was done and the parts put in good position. A plaster-of-paris bandage was applied and good union followed.

DR. E. P. DAVIS gave a demonstration of how fractures in these cases might occur, and how best to prevent them. In doing version it is sometimes exceedingly difficult to prevent fracture of one of the long bones. In podalic version, one should be careful to rotate the head upward as far as possible before bringing the feet downward. In one case he had intentionally fractured the clavicle so as to permit the shoulders to droop forward and thus assist birth of child. In one case about ten days after birth he had found a fracture of the femur, and had last year seen a case in which the humerus had been fractured at birth caused by traction on the arm, made by an inexperienced person.

DR. W. REYNOLDS WILSON spoke of the manipulation necessary in these cases. In one case of breech presentation he had felt something give, and on examination found that this sensation had been due to the slipping of the child's head through a contracted pelvis. He believed that many cases of fracture occurring during birth were due to faulty development of the bony structures.

DR. J. H. JOPSON spoke of a case which he had treated by means of a posterior splint, with good results.

DR. H. R. WHARTON believed that many of these cases of fractures supposed to occur during labor were really due to falls after birth.

DR. L. W. STEINBACH had seen one case of fracture at the upper third of the femur. He had used an inclined plane in the treatment with a wire on the posterior surface, with good results.

DR. DE FOREST WILLARD, in cases of fracture of this character, was in favor of making traction applied to the foot. In most cases which he had known, such had been caused by traction made on a hook placed in the groin.

DR. GEORGE G. ROSS read a paper entitled "Angina Ludovici with Report of a Case."

Meeting held Dec. 3, 1900.

President Dr. De Forest Willard, in the chair.

EXCISION OF LYMPHOSARCOMA OF NECK.

DR. W. JOSEPH HEARN reported a case of operation for lymphosarcoma of the neck, in which it was necessary to sever the pneumogastric, phrenic, recurrent laryngeal and sympathetic nerves and part of the thoracic duct.

The patient was a physician aged 50 years, who had first manifested symptoms of the diease in July, 1898. At this time the face became swollen, which he attributed to catching cold. In the fall of the same year he observed that a small tumor made its appearance under one ear, which was later followed by enlargement of the glands of the neck. In July, 1899, some of the enlarged glands of the neck were removed, and on microscopic examination the disease proved to be one of sarcoma. In September, 1899, the glands were again enlarged, and an operation was decided on. The speaker had been assisted in the operation by Drs. Kean, Taylor and Roe. After the incision had been made the carotid artery and jugular were located and separated. The tumor had so involved the penumogastric, phrenic, sympathetic and recurrent laryngeal nerves that it was impossible to dissect them out, so they had all been severed. It was observed that when the pneumogastric had been cut, the pulse, which had been immediately before somewhat slow, immediately afterward became rapid. When the phrenic was served the abdominal muscles showed a somewhat spasmodic movement. After the thoracic duct had been severed only little chyle escaped, which was probably owing to the small amount of food taken by the patient previous to the operation, but it became more abundant about the tenth day. The patient made a good recovery from the operation and subsequently lived in comfort for many months, but owing to a recurrence of the growth in the region of the sternum and evidences of toxemia death ensued in March, 1900. One interesting feature was that there had been no aphonia, which is said to follow section or disease of the recurrent laryngeal nerve.

DR. W. J. TAYLOR stated that he had assisted at this operation, and believed that it had been the most extensive dissection he had ever seen.

CASE REPORTS.

DR. H. R. WHARTON reported: 1, a case of cholecystotomy; 2, a case of compound fracture of the tibia and fibula, with complicated fracture of the condyle of the femur; 3, a case of left inguinal colostomy for imperforate rectum; 4, a case presenting intermittent symptoms of appendicitis due to a fibrous band. In the cholecystotomy case it was found that a stone had lodged in the cystic duct, while others had been found in the gall-bladder and in the common duct. A biliary fistula had been established and good recovery ensued. In Case No. 2 the X-ray had shown the inner condyle imbedded in the knee-joint, which was opened, and the fragments removed. The limb was afterward kept in an extended position and recovery followed with moderately good motion. Case No. 3 was that of an infant three days of age on whom a left inguinal colostomy had been done. At the end of three months the child appeared to be in good condition. In Case 4 a fibrous band had been found to be attached to the head of the colon and extended downward across the appendix, thus causing either its obstruction or that of the bowel. The speaker also referred to a case of double hare-lip that he had treated in which he had freshened the edges of the wound and allowed the bones to fall inward, thus making a moderately good septum.

OPERATIVE TREATMENT OF CIRRHOSIS OF LIVER.

DR. CHARLES H. FRAZIER reported a successful case; with exhibition of the patient. He was beyond middle life and had suffered from the disease for several years, and on account of the obstinate ascites and other manifestations had been regarded as an incurable one. He had been sent from the medical side of a hospital to the surgical department. An incision had been made extending for several inches, beginning at a point in the median line and below the umbilicus. The fluid had been evacuated, after which the peritoneum over the region of the spleen, near the liver and near the points of the incision, had been rubbed with a gauze pad so as to guarantee adhesions. The diaphragm had also been scarified. The patient had made a good recovery from the ascites. This operation seemed justifiable because it promoted a better venous circulation.

DR. JOHN B. DEAVER had seen a cure of ascites result from simple tapping, and Dr. H. R. Wharton had once done an abdominal operation on a patient suffering with ascites, resulting in a cure of this condition.

TORTICOLLIS.

DR. DE FOREST WILLARD exhibited several cases of torticollis of different types. He believed that one should not be hasty in making a prognosis of such cases when seen for the first time. Many of them seemed obstinate. In some instances a system of gymnastics would be beneficial, while in others it did little good. If there is a neurotic element present, the case will be more refractory. He had seen one interesting case in which there had been marked retraction and rigidity. An operation had been decided on, but on giving an anesthetic all deformity had disappeared, and the operation was deferred. It was believed the case had been one of hysteria.

FRACTURE BANDAGE.

DR. WM. G. PORTER made some remarks on fractures of the leg and exhibited a plaster-of-paris bandage. In cases of fracture he now rolls the parts with a flannel bandage, applies a tin plate and invests the whole with a plaster-of-paris bandage. After this dries somewhat, it is split down the middle and thus conforms to the parts very accurately. It may also be used in injuries of the joints.

Chicago Society of Internal Medicine.

Regular Meeting held Oct. 25, 1900.

President Dr. John A. Robison in the chair.

MEMBRANOUS COLITIS.

DR. JOHN A. ROBISON delivered the Presidential Address, and chose the above subject. He divided the causes into primary, as enteroptosis, infection, bacterial fermentation, intestinal calculi and lack of digestive ferments; and secondary causes, as dyspepsia, traumatism and grave cachectic conditions. The disease most frequently attacks young women who are small-boned, muscular, neuropathic individuals. The face and conjunctivæ are pale and eyes bright, the lips and mucous membrane bluish, and the face is an anxious one. Eruptive skin diseases are frequent. The pulse is usually normal and there is seldom fever in uncomplicated cases. Orthopnea, muscular weakness and insomnia are common and distressing symptoms. Neurasthenic symptoms, especially those of a peripheral neuritis, are frequently met with. The tongue is dry, covered with a thick coating and bleeds easily. The gums are spongy. The breath has a fecal, sometimes urinous, odor, especially in the morning. There may be a peculiar persistent, metallic taste in the mouth. Appetite is good; rarely vomiting, but nausea is common. The stools are most frequent in the early morning and vary from 10 to 40 per day. They are thin, foamy, watery, sometimes bran-like. They may contain much mucus and shreds of tissue. Severe rectal tenesmus frequently precedes the discharge of the membranes. Epigastric pain frequently occurs soon after taking food. It is described as a griping, contracting feeling. It is usually followed by a bowel movement. The abdomen is more or less tympanitic and very tender along the outline of the colon. In cases of enteroptosis there is a dragging sensation with pain in the lower abdomen. Pain is increased by pressure and relieved by heat. Intestinal peristalsis is usually palpable. The urine is scanty, high-colored, of high specific gravity, and frequently contains indol. Transient albuminuria occasionally occurs. Renal insufficiency is exceedingly common. The blood is leukemic in character in severe cases. The venous congestion under the finger-nails is more intense when there is much tympany present. Chemically, the membrane consists of albumin; there is no fibrin. There may be fresh blood on it and it usually contains the bacillus coli communis. Women often have amenorrhea, ovaritis and left salpingitis. The discharge of membranes may occur at intervals, the patient enjoying good health during the interval. Business cares and domestic worries aggravate the case. A disturbance of the nervo-secretory balance is probably the usual underlying cause of the affection. Although the disease is almost invariably a chronic one and the mortality rate low, the prognosis must be guarded. Medicinal treatment is of no avail. Enteroptosis must be treated surgically. Dyspepsia of the gastro-intestinal tract and intestinal infections should receive appropriate treatment. The diet, in most cases, should be ample, varied and easily digestible. The food should be well cooked and nourishing. Rich soups, gravies, sweets, greasy meats and indigestible fruits and vegetables, as well as pastry, should be avoided. Wines containing tannin are allowable. A flannel abdominal bandage should be worn continuously to avoid chilling, as it increases intestinal congestion. Exercise in the open air and sunshine should be insisted on. The mental condition must be well looked after. Renal insufficiency calls for saline diuretics and an occasional hot-air bath. Hot water flushings through a soft rubber tube tend to relieve rectal irritation and in all but the severe cases high, hot colonic flushings are very beneficial. Great care must be exercised in the giving of the flushings. Never give opiates, astringents or irritating drugs. Intestinal antiseptics, digestive ferments, and partially digested foods are valuable. The best intestinal antiseptics, in these cases, are bismuth salicylate, salol, benzoic acid, menthol, guaiacol carbonate, betanaphthol and creosote. Each individual case requires separate treatment according to the symptoms present.

DR. J. M. PATTON reported a case in which the course of the disease was as described by Dr. Robison.

DR. ROBERT H. BABCOCK said that he had a case three years ago which he thought was one of membranous colitis. The patient had suffered from diarrhea for years and every possible treatment had failed to produce any result. His breath had a peculiar odor; the colon was contracted and easily palpable and tender, and he had lost control of his sphincters. He had been on an absolute milk diet at one time and a nearly absolute meat diet at another without benefit. Dr. Babcock put him on a diet of vegetables, fruits, nuts and cereals, prohibiting all animal food, and a simple intestinal antiseptic was given as a placebo. At the end of a month he had improved considerably, all symptoms having disappeared and the discharges were limited to four a day. At the end of five or six months he was perfectly well. The trouble recurred with a slight lapse in diet. A year and a half afterward the man returned, presenting every symptom of pulmonary tuberculosis. He died some time afterward, and on post-mortem a large retroperitoneal carcinoma was found.

DR. EDWARD F. WELLS referred to a class of cases in which the false membrane has a fibrinous appearance and is discharged in large quantities and in long cords.

SOME CARDIOPATHIES OF THE DEVELOPING PERIOD.

DR. A. C. COTTON read this paper, and urged the importance of a more systematic study of the heart during infancy and childhood. Knowledge derived exclusively from the study of adult hearts is too frequently misapplied in the consideration of disorders of early life. The normal progressive changes in the young heart in its relationship to the other vessels and organs during the growth period are either not sufficiently understood or too often overlooked in our efforts at clinical differentiation. There are two classes of heart lesions, namely, the congenital and acquired, or post-natal. Of the congenital class Osler makes three divisions, which the author quoted.

The author reviewed the signs and symptoms of congenital cardiac disorders. He also quoted Townsend's report of 30 cases with regard to duration of life, presence or absence of cyanosis, cardiac signs, blood findings, and cited his own clinical records on these points. Concerning acquired or post-natal heart disorders, he believes their frequency in infancy is not fully appreciated; that their presence is frequently unrecognized in children, because, 1, they are not always sought for; 2, the young are examined with difficulty; 3, lesions are often masked by more obvious symptoms of the primary infectious disorders; 4, the symptoms are often indefinite, merely a listlessness or indifference to play, often only dyspnea, or merely tachypnea.

As to treatment, the writer emphasized the need of heart rest, to be secured by any means of procedure that is not contra-indicated. Drugs, having an alleged direct influence upon the heart, are to be kept in the background.

DR. ROBERT H. BABCOCK said that congenital cardiac affections are of interest not only from a pathologic but also from a diagnostic standpoint, because they are so difficult to diagnose. It may be possible for the physician who sees the case from birth to make a rough diagnosis of the existence of a congenital affection, but for the consultant, who sees a child years afterward, it is sometimes exceedingly difficult to say whether the affection is a congenital one, and if it is to give its exact nature. Histories of early infancy are unreliable because of their obscurity. He has seen several cases which he thought were congenital, but owing to the fact that a post-mortem could not be made the diagnosis was not verified. He cited the case of a young woman who complained of rapid heart action. There was a pronounced murmur accompanying the first sound in the mitral area. Over the upper por-

tion of the sternum there was a very peculiar murmur which extended throughout the whole cardiac cycle, presenting periods of exacerbation, but never wholly ceasing. There was a well-recognized hypertrophy of the left ventricle and hypertrophy and dilatation of the right ventricle. It was diagnosed as a case of mitral regurgitation with probably a patent foramen ovale. The blood examination showed a well-marked chlorosis. The patient died three or four years afterward and on post-mortem there was found stenosis of the organ just beyond the point where the ductus is given off; a persistent ductus arteriosus; the valves were all intact; the left ventricle enormously hypertrophied; the right ventricle showed no enlargement. That simply illustrates the difficulty of making the diagnosis of what would seem to be such a simple matter as a patent foramen ovale—one of the commonest congenital defects compatible with life. The frequency with which acquired cardiac diseases occur in children is not recognized, because the rheumatism from which they suffer is so atypical, so insidious, that its existence is not suspected. Very frequently the first manifestation is an endocarditis. Objective symptoms are easily recognized, but subjective symptoms are often wanting. It is remarkable how little dyspnea a child will be conscious of, and yet to the observer the rapid breathing gives ample evidence of the cardiac impairment, to say nothing about the tumultuous action of the heart of which the child is unconscious. Acute myocarditis is also often overlooked in children. We know of nothing that is pathognomonic of it. The instability of the pulse is a very suspicious phenomenon, but if acute myocarditis is overlooked it is not a reflection on the physician because it frequently presents no very manifest clinical features. The prognosis of cardiac disease in children is serious just as in the other extreme of life. Although the heart of a child is capable of wonderful adjustment to difficulty it is, nevertheless, rapidly exhausted. The prognosis is unfavorable also because of the emotional excitable nature of the child. It can not exert the self-control which is so essential for the preservation of compensation. Furthermore, the heart may rapidly acquire a size far out of proportion to the capacity of the child's chest thus disturbing the circulatory balance. Parents are loath to exert the restraining influence on the young child suffering from heart-disease. The child is fretful and the parents are unwilling to insist on such a regimen as will offer a possibility of prolonging life. Rheumatism in children frequently manifests itself as a tonsillitis and the physician should be alive to its dangers.

DR. LUDWIG HEKTOEN said that in speaking of myocarditis in children, reference should be made to syphilitic myocarditis in congenital syphilis, as it may be the cause of sudden death. He has had occasion to study two cases of interstitial proliferations in the myocardia due to a congenital syphilis. Dr. Cotton's first case of aortico-pulmonary communication is, as far as we know, the first one reported in America and the tenth in literature. In all these ten cases the anatomical conditions were the same. The defect is the result of a developmental anomaly in the septum between the pulmonary artery and the aorta. It is to be distinguished from accidental communications, which are much more frequent and are produced by aneurysms, ulcerative aortitis and similar lesions; also to a persistent, large, and unusually short ductus arteriosus. The sexes are equally represented in these ten cases. The age varies from a few days to thirty-four years. Half of the cases live to be more than 4 years of age. Those cases that lived to be older than 4 years presented well-marked symptoms of heart disease, which were in no way distinctive of the existing condition. Many of the writers refer to the presence of double murmurs at the base of the heart. Cyanosis was observed in many of the cases, but it would be difficult to distinguish between cyanosis due to this communication and cyanosis due to failure of the myocardia late in the disease. Sometimes there is a communication between the aorta and the right ventricle which depends on failure of union between the septum of the bulb and the interventricular septum. As regards the second case, while the mitral and aortic valves were irregularly thickened, there is some question as to whether that could be designated as the result of endocarditis. The valves are smooth and the thickening might be due to irregularity in development. There is a bulging at the junction of the aorta and the interventricular septum and a passage beneath a fully developed anterior aortic valve. In the bottom of this bulging, which is quite aneurysmal in appearance, is situated the opening of the right coronary artery. The smoothness of the wall of this bulging and the perfect condition of the valve seems to speak against aortitis or endocarditis and in favor of a developmental defect. It is impossible to speak definitely on this point, because lesions in intrauterine life heal perfectly. If the defect is to be regarded as being developmental how can it be explained. Dr. Hektoen has studied this question quite thoroughly and has arrived at the conclusion that it is the result of defective development in the septum of the bulb which divides the bulb into the pulmonary artery and aorta, and which, when it unites with the interventricular septum, completes the division of the bulb into the pulmonary artery and aorta and the heart into the left and right ventricle. Two ridges, one anterior and one posterior, help to close the original opening between the two ventricles of the heart. In the case presented there seems to have been delay in the closing of the septum, although the aortic valve developed normally. The embryology of the semi-lunar valves in the human body has not been extensively studied. We know, however, that before the bulb divides into the pulmonary artery and aorta two endothelial cushions appear, one at the beginning of the ridge which forms the beginning of the septum, and as the septum develops these two cushions divide into two additional cushions, thus giving two on each side. These are subsequently hollowed out and form the leaflets of the semi-lunar valves. Vierordt suggested that this hollowing-out process may spread to the septum between the aorta and pulmonary artery and thus give rise to the aortico-pulmonary communication described in Dr. Cotton's first case. It is, however, difficult to understand how the hollowing-out process jumped from a semi-lunar valve to the wall of the aorta. The same explanation might be applied to the defect in the semi-lunar valve in Dr. Cotton's second case, but it meets with the same difficulty there. Defects in the septum between the pulmonary artery and the aorta may lead to three conditions: 1, communication between the aorta and pulmonary artery; 2, communication between the aorta and right ventricle; 3, communication between the aorta and left ventricle under the semi-lunar valve. This is the only case of its kind in medical literature. Bands of different kinds have been found extending across the root of the aorta, but no defect of this character. If these communications are developmental in their origin, they date back to about the sixth week of intrauterine life, because at that time the septum between the pulmonary artery and aorta is complete.

DR. GEORGE W. WEBSTER said that congenital endocarditis occurred with great frequency without exhibiting any known symptoms or reasonable evidence of rheumatism on the part of the mother. These cases of fetal endocarditis involving usually the right side of the heart, contrast strongly with the acquired endocarditis which involves the left side of the heart. The explanation of this probably lies in the fact that the various micro-organisms capable of producing infection and inflammation develop more readily in the venous blood in the left side of the heart after birth, and just as readily in the venous blood found in the right side of the heart previous to birth. It is well known that in cases of congenital or fetal endocarditis they are very prone to attack the pulmonary orifice.

In regard to the diagnosis, he has had three cases under his observation during the last two years and in all of them one of the notable points was the increase in the percentage of hemoglobin, as high as 120 in one case. Another feature was the impaired physical and mental development. One of the patients, a boy of 11, was not larger than a boy of 3½. His intellectual impairment was so great that up to that time he had not been able to memorize all of the alphabet. He would learn three or four letters a day, remember them for that day, but promptly forget them by the next day. He slept most of the time. The cyanosis in all his cases has been more marked

than occurs in any acquired disease of the heart where any other than the pulmonary orifice is involved. He attributes the cause of this to the lessened tissue change which is present in these cases and evidenced by both physical and mental impairment. These cases probably terminate earlier because of the condition of the heart, the impaired circulation and the deficient aeration of the blood. Another reason is that while any defect or deformity or disease of the other valves of the heart rather protects against a pulmonary tuberculosis, with the possible exception of mitral stenosis, stenosis of the pulmonary orifice predisposes to pulmonary as well as to general tuberculosis, from which they are very liable to die. When the heart develops to an extent quite out of proportion to the development of the coronary artery, the tissue of the heart must suffer in its blood supply and this will ultimately destroy life. He emphasized the fact that in children and youths, contrary to what is taught in text-books, the pulmonic second sound is relatively louder than the aortic. As age advances, and as there is lessened elasticity in the systemic arteries and arterioles, the relative pressure in the two systems gradually changes; it becomes higher in the systemic with consequent accentuation of the aortic second tone.

The reason that pericardial effusion is so often overlooked is because the majority of physicians begin the examination of the heart by clapping on a stethoscope as soon as the chest is bared. This is wrong. The diagnosis ought to be made before the stethoscope is resorted to. Careful inspection, palpation and percussion should be made before the stethoscope is used.

DR. ISAAC A. ABT, when examining the hearts of newly-born children, has occasionally heard a murmur over the upper portion of the sternum, which disappeared after four or five days. He came to the conclusion that they were due to the temporary patency of the foramen ovale. Rauchfuss and Huchsinger say that accidental murmurs never occur in children under 3 years. Fisher, of Boston, frequently heard a bruit over the fontanelle of children and called it the brain murmur. This can be heard over the back and base of the heart of young children quite frequently.

DR. J. M. PATTON thinks that murmurs ought to be classified, as has been done by several English writers, into those which are due to errors of development and which antedate the period at which the specialization of organs occurs and which embrace errors of development as acardia, dextrocardia, etc., including probably transposition of the two great arterial trunks, and murmurs due to lesions occurring after the specialization of organs has taken place. These conditions may be called pathological, whereas the previous ones belong to the department of teratology. It is in the latter class that the diseases due to fetal endocarditis belong. The middle ground covers the developmental area of the arterial bulb described by Dr. Hektoen and perhaps some of the anomalies which occur in the various valves. Much discussion has taken place as to which class they belong to. Undoubtedly the majority of cases of stenosis of the arterial cone of the right ventricle and of the pulmonary artery are probably due to fetal endocarditis. Those cases arising from failure of the arterial bulb to place itself in proper position from the twisting process it undergoes previous to the union of septum and auricle and the division of the arterial bulb, probably come under the head of developmental errors including those cases where the aorta is in partial communication with the right ventricle.

Under the second class we can take up Osler's classification: Defects of the septum, ventricles, auricles, anomalies of the valves and all the conditions he describes. The most common result of fetal endocarditis is undoubtedly stenosis of the pulmonary artery or the cone of the right ventricle. Rauchfuss claims that in the absence of congenital malformation disease of the left side is just as common as of the right, and lesions of the aortic and mitral valves are just as frequent as pulmonary lesions in the absence of congenital malformation. Bouchard claims that all these lesions are due to fetal endocarditis. In regard to the marked degree of hypertrophy of the right side of the heart, we must remember the increased pressure the right ventricle is working under and some of the developmental errors are in a measure due to that cause. The septum, in its development, is sometimes disposed so far to the left as to open a direct communication between the right ventricle and arterial bulb. The most experienced clinicians have for the last few years dwelt on the development after birth of endocarditis and pericarditis. The preference is generally given to pericarditis. Sturgis says that pericarditis in children is always accompanied by endocarditis, and that endocarditis in early life is certain to bring about a pericarditis. There is a good deal of difference of opinion as to the occurrences of functional murmurs. Senator thought they were frequent: Trousseau thought they might occur; Jacob did not think they were frequent. We must remember that cardiac cavities develop more rapidly in size than in thickness; murmurs occurring under those circumstances should not be considered as functional. If the child is vigorous, murmurs are not often heard, except when the pulse is, for some reason, rapid, when the murmur might be regarded as a functional one, unless there were distinct evidences to the contrary. Inflammations of the heart are not at all uncommon in children who have had rheumatism, according to statistics, 50 to 80 per cent. Cyanosis occurs most often with stenosis of the pulmonary artery. The cause has been attributed to mixture of the blood, but it also occurs in cases in which there is no admixture. Reeves attributed it to want of oxygenation, which probably has something to do with it. The corpuscles of the blood as well as the hemoglobin are increased. The diagnosis of these lesions is extremely difficult. It is possible to map out the heart and tell whether a murmur is present, but it is exceedingly difficult to tell what causes that murmur. We can only conclude that it is a case of congenital disease of some kind.

DR. HAROLD N. MOYER said that during the last fifteen years Rush has had over a thousand cases of chorea in its clinic. The examination of the heart was rather perfunctory at that time and when more careful examination was made they found a much larger number of heart complications than is usually stated by authorities. It is extremely difficult to impress students and assistants with the necessity of correctly examining the heart. They always want to use the stethoscope first, instead of inspecting, palpating, and then listening. The heart is examined in every case of chorea, and more than half of them have heart complications.

DR. WILLIAM J. BUTLER did not agree as to the difficulty of diagnosing congenital heart lesions. Dr. Cotton made some diagnoses and they were proved correct on post-mortem. The presence of a heart murmur in an infant immediately becomes significant of a congenital heart lesion. It is not so difficult to diagnose lesions that come to one's notice later in life as is generally conceived. The most frequent lesion is that of pulmonary stenosis, whether it involves the pulmonary artery, the conus or the valves themselves. The symptoms and signs are occasionally so strikingly typical as to be easily diagnosed. Cyanosis is very characteristic, but is not always present, as in one of Dr. Cotton's cases. The absence of cyanosis was undoubtedly due to the anemic condition of the child. In these pulmonary lesions there is invariably a murmur, sometimes so marked as to be heard some distance from the chest. They are usually accompanied by a marked chill and are heard and felt most distinctly over the pulmonary area.

Cleveland Medical Society.

Quarterly Meeting, October 26, 1900.

President Dr. Henry S. Upson in the chair.

SOME PROBLEMS IN PEDIATRICS.

DR. L. EMMETT HOLT, New York City, dealt with this subject. The present has been called the age of the child. Taking up first the present status of diphtheria antitoxin he pointed out that all its opponents who had consented to give it fair trial had been won over. Reciting the facts and statistics in detail, he showed that the mortality from diphtheria has everywhere been reduced more than one-half by the use of antitoxin, and in each locality in proportion to the vigor and extent of its employment. The proportion of laryngeal cases requiring operation has been reduced one-half, and intubation now saves 70 per cent. of cases instead of the former 30 per cent. The

physician who now treats diphtheria without antitoxin is guilty of as great criminal negligence as is a surgeon who does a laparotomy without sterilizing his hands, instruments or dressings. Immunizing doses have been too small; 500 to 700 units should be given to a child of 5 years, and 250 to 350 to an infant under one year.

Koplik's sign in measles he had found present in 90 per cent. of cases and is almost as characteristic of the disease as the skin eruption. It enables diagnosis in the majority of cases one day before the eruption; and in a few cases still earlier. When recognized there is always found to be some rise of temperature, so that its value in preventing the spread of an epidemic is not sure. It is of great value in differential diagnosis.

Infantile scurvy deserves more attention from the profession than it receives. Frequently it is called rheumatism, and at times neuritis, joint disease, or ostitis, but these diseases rarely occur so early in life—83 per cent. of cases of scurvy occurring at 6 to 15 months. Proprietary foods, sterilized milk, and condensed milk are the chief causes of the disease.

DR. L. B. TUCKERMAN said that any improvement in the feeding of children probably adds more to the sum total of health than the most marked advance in surgery. He asked the essayist if anything was known to the effect on dairy milk, and through it on children, of the feeding of cows on ensilage, a practice which has grown very common with farmers.

DR. OSCAR B. CAMPBELL said that without doubt modified milk was the best food for infants, but that practically the methods are hard to follow. It had been his experience that in very many cases the mother or some other person had interrupted the treatment by the administration of some of the proprietary foods, and had neglected to follow out the prescription. He wished to know how the man in general practice was going to carry out this method of feeding, when he had so little control of the case.

DR. JOHN L. HESS asked what had been the essayist's experience with modified milk as compared with Pasteurized milk. It had been his experience that children had thrived better upon the Pasteurized milk than they had upon the milk from the Walker-Gordon laboratory.

DR. HUNTER H. POWELL said that beyond doubt the modified milk was very superior to the ordinary Pasteurized milk, because the proportions of its constituents can be changed to suit the individual case. He asked the essayist if peptonized milk had any particular action in scarlet fever, as has been claimed by some authorities. His experience with diphtheria antitoxin has been very favorable. While the antitoxin is expensive for the poor, it yet may not cost the poor man as much as a dozen visits from a physician, which he would otherwise probably have to pay for.

DR. NATHAN ROSEWATER said that it should be noted that there are times when no food will agree with children, while after the nervous conditions have passed away the results are much better. Therefore, it should not be expected that even modified milk will on first trial agree in every case.

DR. SAMUEL W. KELLEY said that he had been very much aided in feeding infants by the establishment of the Walker-Gordon laboratory in Cleveland. However, it is possible in many cases to teach the parent to modify milk satisfactorily at home. In regard to the use of diphtheria antitoxin he said that in his practice it had not been increasing as fast as with the general profession, and he had never found it necessary to use such large doses as some recommended. He thought that 2000 or 3000 units would cure the average case. He thought that it was largely due to the influence of the manufacturers that such large doses were being used. He is suspicious that the standard preparations are little more reliable than the concentrated ones, and he wished to know what Dr. Holt's opinion was on this point. He thought that the clinical picture of diphtheria was so plain that it was seldom necessary to wait for a bacteriologic examination.

DR. HOLT, in closing, said that he did not know much about the feeding of cows, but that men who had given the matter attention thought that ensilage was a very good and a very safe food. He thinks there is some misunderstanding as to what modified milk really is, and it seems that it is anything that the physician wants. The percentage of fat, sugar and proteids can be constantly varied to suit the physician's prescription. He thought that babies in Cleveland must have different stomachs from those in New York if Pasteurized milk suits them better than modified milk. The chief value of the laboratory is that it does things definitely, so that if the baby needs a change of food the physician can get just what he wants. If the child is spitting up milk, we know that probably less fat is required, or if it is getting fat too rapidly we should order less sugar. The milk laboratory occupies the same relation to the physician as does the drugstore.

He thought that most of the antitoxin offered for sale is reliable. It is made mainly by large firms because it requires an expensive outfit, and it is usually fresh when made by such firms as Parke, Davis and Company, Mulford and Company, and Frederick Stearns and Company. The concentration of the antitoxin has much to do with the number of doses necessary. In regard to the few sudden deaths reported from its use, he thought that it was not different from our early experiences with any other remedy.

Denver and Arapahoe Medical Society.

Regular Meeting held Nov. 27, 1900.

SUBARACHNOIDEAN INJECTION OF COCAIN FOR ANESTHESIA.

DR. JOHN S. MILLER thinks that the term "subarachnoidean injection" is more descriptive and more nearly anatomically correct than the terms "medullary injection," medullary narcosis," "subdural infiltration," "spinal anesthesia," "cocain anesthesia" of the spinal cord, etc. This new procedure will have to pass through the ordeal of probation divided into three stages, viz., enthusiasm, moderation, and finally approbation. He suggested an experimentation on a dog for the purpose of studying the diffusibility of the cocain solution in the lumbar subarachnoidean space. In summing up the advantages of the subarachnoidean method over the general anesthesia he said that the respiratory, cardiac, gastric and renal organs are not so seriously disturbed as by the inhalation method. Still another advantage is that of the ability of the patient to confer with the surgeon during the operation in case a modification of the original plan must be made and the patient's consent is necessary. He referred to the medicolegal aspect of this mode of anesthesia.

DR. J. T. ESKRIDGE does not believe in the theory of diffusion through the spinal fluid. He is of the opinion that the cocain solution is absorbed through the circulation, that in order to produce anesthesia it is not necessary to inject the cocain solution into the arachnoidean space, that anesthesia will follow the injection outside the dura. There can be no anesthesia in any part in which the blood-vessels have been previously cut.

DR. LEONARD FREEMAN would prefer in all major operations complete general anesthesia, so as to insure absolute relaxation of muscles and avoid the possibility of inflicting pain should the action of the cocain for any reason close before the operation is completed. He thinks the method should be used in persons who have a mortal fear of the state of unconsciousness.

DR. C. P. HERSHEY reported two cases in which the subarachnoidean method was used. The first was a painful knee-joint in which the merest touch would produce pain. Ten minutes after the injection the anesthesia was complete. The patient, a lady, became talkative, nervous, then sick at the stomach. The second case was that of fistula in ano in a male. He, too, became very talkative. The anesthesia was not complete and was not equally distributed. There was no headache and no vomiting.

DR. WM. C. MITCHEL exhibited a 2 per cent. solution of cocain which contained numerous colonies of various bacteria. He described his method of preparing sterile cocain solution, which was used in the two cases reported by Dr. Hershey. He filters the solution and then exposes it to a temperature of 176 F. for one hour, which destroys the bacteria, but not the spores. After twenty-four hours he again exposes the solution to a temperature of 176 F. for an hour, and the day following he gives

a final sterilization as before. This method is both scientific and reliable.

DR. VAN ZANT cannot agree with the absorption theory of Dr. Eskridge, since the patients retain their motor functions.

Detroit Medical Society.

Regular Meeting, held November 21, 1900.

SOME OBSERVATIONS ON NORMAL TEMPERATURES IN CHILDREN.

DR. WILLIAM M. DONALD read a paper on this subject. Twenty children, all apparently in perfect health, inmates of the Protestant Orphan Asylum, were selected for the experiment. Temperatures were observed night and morning for fourteen days, giving a total of 28 collective readings. Twelve collective readings, or 42 per cent., gave a constant mean evening temperature of 99 Fahrenheit, or over. Five collective readings, or 18 per cent., gave a higher morning than evening temperature. There were 560 individual readings. On 13 occasions, or .02 per cent. of the 560 readings, a temperature of 100 or over, was found. On one occasion a temperature of 101 was recorded and on another occasion 102 was reached.

Of the 20 children examined 30 per cent. showed a tendency to a constantly high temperature of about 99 to 99.5. Fifteen months after these observations were made these children remained in the same state of perfect health, no pathological condition developing or becoming manifest to account for this aberration from the normal. The conclusions were that a higher or lower temperature may have no pathological significance, being purely physiological.

DR. A. W. IVES read a paper on "Thermotaxis," dealing with the physiological process of heat production and dissipation.

DRS G. W. MORAN, M. L. High, Walter J. Wilson, Jr., C. G. Jennings, W. L. Anderson and A. D. Holmes discussed the papers.

DR. ANGUS MCLEAN presented an aneurysm removed from femoral artery, with report of case and exhibition of patient.

DR. EUGENE SMITH reported two cases of mastoid disease with operation.

DR. DON M. CAMPBELL reported a case of large foreign body removed from the eye with the Johnston magnet. The piece of iron and magnet were exhibited.

Therapeutics.

Epistaxis.

All that is necessary in epistaxis is to fashion with a pair of scissors a dry plug of prepared sponge, in size and length comparable with the little finger of a 12-year-old boy. Soak this in boiled water, squeeze it dry and insert its full length, gently along the floor of the bleeding nostril. No styptic will be necessary. The expansive pressure of the sponge increased by the coagulation of the blood will check the hemorrhage immediately. Remove it in twelve hours and under no circumstances allow it to remain longer than twenty-four hours.

—*Sajous' Cyclopedia.*

Removal of Dressings from Wounds.

In order to relieve the pain and irritation caused by the removal of dressings adhering to a wound, pour some hydrogen peroxid over the adherent part of the dressing. This will rapidly soften the coagulated discharges and the dressing will come off readily. This method saves time in prolonged soaking with ordinary solutions, and relieves the apprehension of the patient usually shown at each fresh dressing.

—*Canadian Pract. and Rev.*

Jaundice.

The following prescription for catarrhal jaundice is recommended by the *Riforma Medica:*

R.	Resinæ podophylli		
	Ext. hyoscyami		
	Saponis, āā.....	gr. ivss	25
	Ext. rhei	gr. xv	1

M. Ft. pil. No. x. Sig. One or two pills daily.

Albuminuria of Pregnancy.

James W. McLane, in the *Medical News,* orders rest in bed, plenty of fresh air, skimmed milk diet, with no alcoholic liquors, half a gallon of water—not mineral—a day, to flush out the kidneys, a daily warm bath, and the following pill may be given when necessary:

R.	Ext. colocynth comp.....	gr. ii	12
	Massæ hydrargyri.....	gr. iss	09
	Ext. nucis vomicæ.....	gr. 1/6	01
	Pulv. aloes	gr. ss	03

M. Ft. pilula No. i. Sig. At bedtime.

In acute cases, if the patient is plethoric, venesection is advised, or dry or wet cupping over the loins and free catharsis:

R.	Hydrarg, chloridi mitis.....	gr. x	66
	Sodii bicarbonatis	gr. xx	1 33

M. Sig. At one dose.

If there is no relaxation of symptoms, induce labor as soon as the child is viable.

To Lessen Labor Pains.

In a lecture on "Mechanism of Normal Labor," Dr. Davis recommends an injection, per rectum, of:

R.	Lactis		
	Aquæ, āā	℥i	32
	Chloral hydratis	gr. xxx	2

M. Sig. Administer per rectum.

The above may be used during the first stage of labor to lessen pain. As the head passes the vulva the patient is given sufficient chloroform to dull the sensibility.

—*Monthly Encyc. of Med.*

Tapeworm.

The *Medical Record* contains the following prescription for tapeworm. The synergistic combination should certainly accomplish the purpose for which it is given:

R.	Granati—pomegranate	℥iv	16
	Peponis—pumpkin seed	℥i	32
	Ext. aspidii—male fern.....	℥i	4
	Pulv. ergot	℥ss	2
	Olei tiglii	m. ii	12
	Gum arabic	℥i	4
	Aquæ, q. s., ad.....	℥viii	256

M. Sig. At one dose, followed by a dose of rochelle salts.

The intestinal tract is first relieved as much as possible by giving the patient but little food and a full dose of rochelle salts.

To Retain Nutrient Enemas.

The instillation of a few drops of a 3 per cent. solution of cocain into the rectum by means of a medicine dropper has been recommended in order to aid a patient to retain an enema when it is given with that object in view; by this procedure the sphincter is partially anesthetized for a period of twenty to thirty minutes.

Wet and Dry Dressings.

R. H. Skillern, as stated by the *Phila. Med. Journal,* advises as to when to use dry and wet surgical dresssings in dealing with minor operations, and as the general practitioner is called on to meet such cases frequently, we give his comparison of the efficiency of wet and dry dressings:

1. A dry dressing is superior to a wet one in incised wounds.
2. In contused and lacerated wounds a wet dressing should be employed for a week or two, followed by a dry one.
3. In carbuncles, boils and infected wounds, a wet dressing is indicated.
4. When pus has burrowed and sinuses exist, packing and a dry dressing are preferable.
5. In deep punctured wounds with a small orifice, a wet dressing is better.

In all wounds of the scalp whether infected or not, a dry dressing should be used.

Chilblains.

R.	Acidi sulphurosi	3iii	12
	Glycerini	℥i	4
	Aquæ destil	℥i	32

M. Sig. Apply on lint to the affected parts.

Penna. Med. Jour.

Acute Bright's Disease.

Stevens, in *Phila. Med. Journal*, gives a summary of an article by J. M. Bruce, which appeared in *Practical Medicine:*

Rest in bed in a room at not less than 60 F.; flannel garments, blankets, no sheets; careful nursing; warm baths; never cold.

The patient should be placed upon a milk diet—diluted with water if necessary—and as a purgative he advises the following:

R.	Potassii bicarb.	℥ii	8 |
	Sodii tartratis	gr. x	|66
	Tinct. aurantii corticis	m. xv	1 |
	Syrupi aurantii	m. xxx	2 |
	Aquæ destil., q. s., ad	℥i	32 |

M. Sig. At one dose.

As a saline diuretic and diaphoretic:

R.	Potassii acetatis	gr. xx	1 |33
	Potassii bicarbonatis	gr. x	|66
	Solutionis Am. acetatis	℥ii	8 |
	Tinct. limonis	m. x	|66
	Syrupi	m. xxx	2 |
	Aquæ q. s., ad	℥i	32 |

M. Sig. At one dose every six hours.

In the more severe cases vapor and hot-air baths. If the case progresses properly different forms of farinaceous foods may be given in addition to milk. Then in succession, light vegetables, subacid fruits, fish, fowl or game, fat bacon. The urine, heart and general strength should be watched and with the meals an abundance of distilled or vichy water should be given.

AS A DRINK.

R.	Potassii bitart.	℥v	20 |
	Syrupi, q. s.		
	Aquæ bullientis	Oi	512 |

M. Sig. Drink ad lib.

Give no stimulants and caution patient about sitting up, a return to which should be gradual. And at this time prescribe the following as an unstimulating diuretic mixture:

R.	Ferri et ammonii citratis	gr. v	|33
	Potassii citratis	gr. v	|33
	Ext. scillæ flu	m. i	|06
	Spts. etheris nitrosi		
	Syrupi aurantii, āā	m. xxx	2 |
	Aq. destil., q. s., ad	℥i	32 |

M. Sig. At one dose three times a day after each meal, and give a purgative each morning.

Fetid Bronchitis.

Naphthalin is considered by Dr. Pirnot a most excellent remedy in fetid bronchitis. He relates two cases in which the fetor was so strong that it was difficult or impossible for people to stay in the same room with the patient. He prescribes the following:

R.	Naphthalin	℥i	4 |
	Alcoholis—absolute.		
	Syr. pruni virg., āā	℥iss	48 |
	Ext. scillæ flu	℥iv	16 |
	Tinct. aconiti	m. viii	|5

M. Sig. One teaspoonful every three hours.

In addition he ordered the following to be given alternately with the above:

R.	Iodoformi.		
	Calcii phosphati, āā	gr. xxiv	1 |5
	Pulv. ipecacuanhæ.		
	Ext. hyoscyami, āā	gr. vi	|36
	Pulv. opii	gr. iv	|25
	Olei anisi	m. x	|66

M. Ft. capsulæ No. xxiv. Sig. One every three hours.

One patient was cured within a month and the others within eighteen days. —*Merck's Archives.*

Crusts and Fissures of the Nostrils.

R.	Unguenti hydrarg. ammon.		
	Vaselini, āā	℥iiss	10 |
	Zinci oxidi	gr. lxxv	5 |
	Plumbi acetatis	gr. 1/4	|015

M. Sig. For external application night and morning.

—*Practitioner.*

Venereal Warts.

For a corona of small warts just back of the glans penis, and traced to the irritative action of the vaginal secretions on a surface weakened by too much venery, use the following dusting powder, and insist upon continence for at least three months:

R.	Hydrargyri chloridi mitis	℥ss	2 |
	Acidi tannici	gr. xx	1 |33
	Bismuthi subnitratis	℥ss	2 |

M. Sig. Use locally as a dusting powder. —Shoemaker.

Acne.

Acne in its different forms is not infrequently met with by the general practitioner. Shoemaker, in the *Medical Record*, advises the following treatment in acne due to digestive derangements:

R.	Creosoti	m ss	|03
	Cerii oxalatis	gr. ii	|12
	Pepsini puri	gr. i	|06
	Strychninæ sulphatis	gr. 1/60	|001
	Tinct. belladonnæ	m. ii	|12
	Podophyllotoxini	gr. 1/10	|006

M. Ft. capsula No. i. Sig. One such to be taken after each meal and at bedtime if necessary.

R.	Acidi salicylici	gr. xx	1 |33
	Olei eucalypti	m. x	|66
	Acidi borici	℥ss	2 |
	Ungt. zinci oxidi		
	Ungt. aquæ rosæ, āā	℥ss	16 |

M. Ft. unguentum. Sig. As a local application night and morning.

Hepatic Colic Gall-Stones.

In the treatment of hepatic colic the use of morphin may be avoided by giving other preparations of opium accompanied with some antispasmodic. Bacaloghi outlines the following treatment in hepatic colic:

R.	Ext. belladonnæ	gr. ss	|03
	Ext. opii	gr. ii	|12
	Ol. theobromatis, q. s.		|

M. Ft. one suppository—make four such. Sig. One, and in one hour repeat, then every two hours.

Apply over the region of the liver a flaxseed poultice made with laudanum. Give the following internally:

R.	Sodii bicarb	℥i	4 |
	Aq. destil	℥iii	96 |
	Syr. simplicis	℥i	32 |

M. Sig. One teaspoonful every half hour, alternating with:

R.	Acidi citrici	℥i	4 |
	Aquæ destil	℥iii	96 |
	Syrupi limonis	℥i	32 |

M. Sig. One teaspoonful at a dose every half hour.

Jaundice in the Newly Born.

R.	Ammonii chloridi	gr. i	|06
	Syrupi acaciæ	℥ss	16 |

M. Sig. A teaspoonful every two hours.

The above is recommended by Musser, who advises it in the mild forms. He first recommends the administration of a mild laxative, as calcined magnesia or calomel, and proper elimination by the kidneys by giving potassium nitrate well diluted.

Vaginal Irrigation in Leucorrhea.

Lutaud, in the *Medical Record*, gives the following formula:

R.	Potassii chloratis	gr. lxxv	|5
	Vini opii	℥i	4 |
	Aquæ picis	℥iv	128 |

M. Sig. Add two or three teaspoonfuls to a quart of warm water as a douche.

The following combination of creolin and hydrastis contains the antiseptic properties of the one and the astringent properties of the other:

R.	Creolin	℥ii	8 |
	Pulv. ext. hydrastis q. s. ad	℥ii	64 |

M. Sig. One tablespoonful to a quart of warm water twice a day.

Unpalatable Drugs Made Palatable.

Dr. L. Freyburger, in his "Pocket Formulary of Diseases of Children," offers the following suggestions:

Aloin, one-quarter grain, is disguised by ten minims of fluid extract glyeyrrhizæ comp.

Ammonii bromidum, ammonii carbonas, and chloral hydras, one grain, are disguised by five minums of syr. aurantii.

Potassii bromidum, three grains, is disguised by fifteen minims of syr. aurantii.

Potassii iodidum, one grain, is disguised by one-half dram aqua menthæ piperitæ.

Quininæ hydrochloras, one half grain, is disguised by twenty minims syr. aurantii.

Sodii salicylas, three grains, is disguised by five minims of syr. simplex and one dram syr. cinnamomi.

Medicolegal.

Admissibility of Declarations of Pain.—The Supreme Court of California holds, in Green vs. Pacific Lumber Company, that a nurse being asked to state any complaints of pain and suffering heard is not objectionable on the ground either that the witness is not an expert or of the evidence being hearsay. It says that involuntary declarations and exclamations of a person's present pain and suffering are admissible as tending in some degree to show his physical condition. Of course, when these declarations only amount to statements of his past condition, they should be rejected.

Alcoholic Insanity as Defense to Crime.—In State vs. Rigley, the Supreme Court of Idaho holds that where the evidence shows a party made an assault with intent to commit murder, and the defense of alcoholic insanity is set up, it must clearly appear from the evidence that the party making the assault had no deliberate intention of doing so from motive of revenge for a real or imaginary injury. The kind of alcoholic insanity which simply tends to accelerate the party in seeking revenge for either a real or imagined injury, and which is directed solely against the author of such injury, the court declares, is a very different disease from that which is motiveless, and results in a mere "delirious fancy and a muscle raised obedient to its impulse."

Insane Delusions Affecting Wills.—Prejudices, dislikes, and antipathies, however ill-founded, or however strongly entertained, the Supreme Court of California says, in re Kendrick's Estate, can not be classed as insane delusions; nor is every delusion an insane delusion. Whenever one's mind is tricked or deceived into a false opinion or belief, it has been played upon; it is deluded. But an insane delusion is the spontaneous production of a diseased mind, leading to the belief in the existence of something which either does not exist in the manner believed—a belief which a rational mind would not entertain, yet which is so firmly fixed that neither argument nor evidence can convince to the contrary. Moreover, such an insane delusion must have operated to cause the production of the will which is under attack to justify a refusal to probate it. Then the court states that it is a characteristic of monomania and insane delusion that, when the conversation turns upon the subject, the patient is dominated by it, and can not conceal his conviction.

Examination Twenty Months After Alleged Rape.—The New York Penal Code contains a provision that no conviction can be had for rape on the testimony of the female defiled, unsupported by other evidence. To meet this, the fourth appellate division of the Supreme Court of New York holds, in People vs. Butler, that it was error to permit to be introduced the testimony of a physician to the effect that during the time of the trial, twenty months after the date of the alleged commission of the crime, he made an examination of the person of the prosecutrix, and found that she was not a virgin, because that would not tend to prove that the female had illicit intercourse at or even about the time averred. On the other hand, the court says that it would undoubtedly have been competent for the defendant to have proved that the genital organs of the prosecutrix at the time of the trial were in such condition as to indicate that she was then a virgin, which, if the testimony was believed, would have exonerated him. Further along, the court says that the crime of rape is a most atrocious one, and one which most naturally tends to enlist the sympathies of all men, and, of course, of jurors, in favor of the victim. In such cases, where, as a rule, the accused has no weapon of defense except his own uncorroborated denial, the courts, it adds, should be extremely careful that no evidence of a tendency to excite or influence the resentment of jurors, and which does not tend to support the evidence of the prosecutrix, or to connect the defendant with the commission of the crime, should be permitted to go to the jury.

Caring for Employees Injured Outside Line of Duty.—The manager of a business corporation, the Supreme Court of Nebraska holds, in the case of Chase vs. Swift and Company, has no implied authority to furnish medical aid and assistance to a servant of the corporation who has been injured outside the line of his duties. This was an action brought by a practicing physician to recover for professional services rendered to employees of the defendant corporation who had been injured in some manner during the progress of a strike. The employees in question had been brought from other points to take the places of strikers, and the theory upon which the action was prosecuted was that the superintendent, who had the direction and management of the company's business at that point, had agreed to take care of any of the new men who should be injured by the strikers in consequence of having engaged in the service of the company. But when, where, or why they were injured did not appear. Under these circumstances, after resolving all doubts in the plaintiff's favor as to what the superintendent agreed to do and the extent he was authorized to bind his principal, the court holds that a peremptory instruction was properly given the jury to find for the defendant. It says that it was certain that the men were not hurt while in the actual service of the company, and there being no proof that they were assaulted by the strikers, or that there was an causal relation between their injuries and the service in which they were engaged, it adds that it seems quite clear that it was not within the apparent range of the superintendent's ageney to employ a physician to attend them.

Minnesota Law for Treatment of Inebriates Invalid.—Chapter 260 of the Minnesota Laws of 1897, entitled "An act to provide for the treatment of inebriates by counties and prescribing rules governing the same," the Supreme Court of Minnesota holds, in Murray vs. Board of Commissioners of Ramsey County, is unconstitutional, in that it is special legislation as to the affairs of counties, and is not uniform in its operation throughout the state. By this act an attempt was made to remove the objections pointed out by the supreme court when it held that a former similar act was invalid which applied to the whole state but attempted to confer powers and duties upon the probate judges beyond the jurisdiction authorized by the constitution. But the limiting, by its terms, of the operation of this second act to counties having a population of 50,000 or more, the supreme court does not think a proper classification for legislation of this character. Nor, if the primary purpose of the law was to protect the public from the results of drunkenness by curing the inebriate, does it think it defensible to limit the cure to one patient to each 10,000 of population. The purpose of the law being to provide a bounty to needy inebriates, to the end that they might be cured of their disease, and the public thereby incidentally benefited, there was, and could be, the court declares, no reason, necessity, or propriety for discrimination against any of them. In short, it considers the classification on the basis of population, for the purpose of legislating for the relief of such indigent inebriates was purely arbitrary, and holds that the act was as clearly unconstitutional as would be a law providing for the care of insane persons or the poor of a limited number of counties at the cost of such counties, and excluding the insane and poor of all the other counties of the state from the opera-

tion of the act. In conclusion, the court says that it is not to be understood as holding that a general act, uniform in its operation throughout the state, providing for the treatment of inebriates at the expense of the public, would not be a valid law; for reclaiming the inebriate, who is incapable of self-respect or self-support, and restoring him to society prepared again to discharge the duties of citizenship, directly promotes the public welfare.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, Dec. 8.

1 *The Operation for Hypospadias with Demonstration of Three Successfully Treated by the Forward Dislocation of the Urethra. Carl Beck.
2 *The Present Status of the Treatment of Prostatic Hypertrophy in the United States. Ramon Guitéras.
3 Notes on the Hospital Scarlet-Fever Service in New York City from 1893 till 1899, Inclusive. William L. Somerset.
4 *A Plea for General Anesthesia in the Treatment of Mammary Abscess. Frank H. Field.
5 *Mastoid Abscess. Ruffin A. Wright.

Boston Medical and Surgical Journal, Dec. 6.

6 *The Treatment of Placenta Previa by Cesarean Section with Report of a Successful Case. Francis D. Donoghue.
7 The Duties of the Medical Examiner in Massachusetts. Julian A. Mead.
8 A Case of Alexia, Mind Blindness, etc., with Autopsy. Edwin E. Jack.
9 Note on the X-Rays as a Curative Agent in Certain Diseases of the Skin. Francis H. Williams.

Philadelphia Medical Journal, Dec. 8.

10 Further Remarks on the Bisection of Fees, Surgical Drummers and Drumming Surgeons. G. Frank Lydston.
11 *A Tropical Ration. (To be concluded.) J. R. Kean.
12 The X-Rays in the Treatment of Carcinoma. Wallace Johnson and Walter H. Merrill.
13 Principles of Asepsis Applied to Operative and Other Wounds of the Eye. (To be concluded.) Edward Jackson.
14 *Suprarenal Gland in Hay-Fever. Lewis S. Somers.
15 *Sanitary Work in the City of Havana. W. N. Bispham.
16 Nasopharyngeal Mycosis with Report of a Case. P. S. Donnellan.

Medical Record (N. Y.), Dec. 8.

17 *Tuberculosis of the Eye: Its Differential Diagnosis, Pathology and Treatment. Charles Stedman Bull.
18 *The Treatment of Tumors by Electrolysis. William B. Neftel
19 *Infant Feeding. Louis Fischer.
20 A Mistake in Therapeutics. Edward P. Buffet.

Medical News (N. Y.), Dec. 8.

21 *An Improved Technic in Amputations of Large Rectal Prolapse. George Ryerson Fowler.
22 *A Modification of the Mosquito Theory. Charles R. Grandy.
23 *Heat-Stroke as a Post-Operative Complication. C. L. Gibson.
24 Chloralamid. S. V. Clevenger.
25 State Sanatoria for Consumptives in Michigan. Herbert Maxon King.
26 *A Study of Drainage. A. M. Pond.
27 A New Urethrotome. George Rubin.

Cincinnati Lancet-Clinic, Dec. 8.

28 Dilatation of the Stomach from Pressure on the Superior Mesenteric Artery, Vein, and Nerve on the Transverse Segment of the Duodenum. Byron Robinson.
29 A Few Points in the Treatment of Fractures. Robert Carothers.
30 Case Reports. H. J. Whitacre.

St. Louis Medical Review, Dec. 1.

31 Physiology of the Bile. Charles Shattinger.
32 *Remarkable Reduction of Mortality in the Treatment of Acute Alcoholism. J. K. Bauduy.

American Practitioner and News (Louisville, Ky.), Nov. 15.

33 Report of Surgical Cases. John R. Wathen.

Medical Fortnightly (St. Louis), Nov. 26.

34 Anesthesia by Special Cocainization. Carl E. Black.
35 Causes of Blindness in the Illinois School for the Blind. A. L. Adams.
36 Report on Microscopy—Malaria. S. E. Munson.
37 Report of a Case of Brain Tumor. E. L. Crouch.
38 Blood Examination and Diagnosis. B. F. Gillmor.

Virginia Medical Semi-Monthly (Richmond), Nov. 9.

39 *Comparative Value of Laboratory and Bedside Diagnosis. E. C. Levy.
40 The Functions of Medical Societies in General, and of the Medical Society of Virginia in Particular. Hugh T. Nelson.
41 Report of a Case of Carcinoma of the Stomach. A. L. Gray.
42 Intravenous Transfusion with Normal Salt Solution. I. S. Stone.
43 Injuries to the Wrist—Diagnosis and Treatment. Edward A. Tracy.

Maryland Medical Journal (Baltimore), December.

44 The Importance of Instruction in Medical Schools Upon the Modification of Milk for Prescription Feeding. Andrew H. Whitridge.
45 A Case of Acromegaly in a Negro Associated with a Low Grade of Giantism. J. Hall Pleasants.
46 A Review of Some of the Recent Work on the Physiology and Pathology of the Blood. Thomas R. Brown.

Archives of Otology (New Rochelle, N. Y.), October.

47 *On the Inadequacy of Some of the Arguments in Favor of Helmholtz's Theory of the Transmission of Sound in the Middle Ear. Gustav Zimmermann.
48 Anatomical Investigations on the Hypertrophy of the Pharyngeal Tonsil. J. Hynitzsh.

Bulletin of the Cleveland General Hospital, July.

49 Paralysis Agitans. Charles J. Aldrich.
50 A Case of Ruptured Tubal Pregnancy. Charles B. Parker.
51 A Plea for Better Obstetrical Work. Lillian G. Towslee.
52 Spontaneous Fracture; Report of Two Cases. Norman C. Yarian.
53 Conservatism in Injuries of the Extremities. Charles B. Parker.
54 Epithelioma of the Vulva. Norman C. Yarian.
55 Hay-Fever. Charles G. Foote.

American Journal of the Medical Sciences (Philadelphia), December.

56 *A Case of Malaria Presenting the Symptoms of Disseminated Sclerosis, with Necropsy. William G. Spiller.
57 *The Cortical Localization of Sight and Hearing. Clarence A. Good.
58 *The Leucocyte Count in Serous Pleurisy. John Lovett Morse.
59 *The Operative Treatment of Cirrhosis of the Liver. Charles H. Frazier.
60 Report of a Case of Extensive Dissecting Aneurysm of the Aorta. Herbert Swift Carter.
61 *On the So-called "Irritable Bladder" in the Female. Frederic Bierhoff.

Journal of Comparative Neurology (Granville, Ohio), October.

62 A Contribution on the Cranial Nerves of the Cod Fish. C. Judson Herrick.
63 Notes on Prof. Judson Herrick's Paper on the Cranial Nerves of the Cod Fish. F. J. Cole.
64 Further Observations on the Conditions Determining the Number and Arrangement of the Fibers Forming the Spinal Nerves of the Frog (Rana Virescens). Irving Hardesty.
65 Anastomosis of Nerve Cells in the Central Nervous System of Vertebrates. N. Worth Brown.
66 A Brief Summary of the Researches of Theodore Kaes on the Medullation of the Intracortical Fibers of Man at Different Ages. Helen B. Thompson.

Annals of Surgery (Philadelphia), December.

67 *Structure. Fracture and Refracture of the Patella. Edward M. Corner.
68 *Suppurative Pericarditis and Its Surgical Treatment, with Analysis of Fifty-one Cases Reported in Literature. Charles Burnham Porter.
69 *The Radical Cure of Inguinal Hernia in the Female. William B. Coley.
70 *Echinococcus Cyst of the Liver. Russell S. Fowler.
71 A Complete Series of Clinical Charts for Keeping the Records of Surgical Cases. Charles H. Frazier.
72 Result of Operation for Cancer of Penis. Nathan Raw.
73 *Fracture of the Spine. Walter Lathrop.
74 Transperitoneal Ureterolithotomy. Report of a Case in Which the Stone Was Located by the X-Ray. George N. J. Sommer.

Indiana Medical Journal (Indianapolis), December.

75 The Physician's Success from a Business and Intellectual Standpoint. David W. Stevenson.
76 The Diagnosis and Treatment of Gall-Stones. James Henry Carstens.
77* The Physician as a Sanitarian. Hugh A. Cowing.
78 Method of Preserving Blood for Laboratory Examination. William Dodds.

Obstetrics (N. Y.), November.

79 A Contribution to the Treatment of Rupture of the Uterus. H. Schmit.
80 A Case of Fetal Anasarca and Strangulation. A. W. Carson.

American Journal of Insanity (Baltimore), October.

81 Some Statistics and Partial History of the Insane in Virginia. R. J. Preston.
82 Some Thoughts Relative to the Etiology of Degeneration. Chas. E. Woodruff.
83 Primary Dementia. Geo. P. Sprague.
84 A Study of Mental Responsibility. Charles W. Hitchcock.
85 *The Duty of the State in the Care of the Insane. Emil Kraepelin.
86 On the Clinical Study of Psychiatry. August Hoch.
87 *The Alcohol Question. A. Forel.
88 Dementia Precox. Gershom H. Hill.
89 The Insane in General Hospitals. J. M. Mosher.
90 A Contribution to the Study of Hereditary Chorea. Walter D. Berry.

91 A Semiannual Critical Digest of Some of the Literature on Epilepsy. L. Pierce Clark.

Journal of Medicine and Science (Portland, Me.), November.

92 An Hour in Orthopedic Surgery. Daniel W. Marston.
93 A Life Needlessly Sacrificed. Was it Incompetency, or What? D. A. Robinson.
94 Masso-Therapeutics (continued). E. H. Judkins.

Canadian Practitioner and Review (Toronto), December.

95 Primary Sarcoma of the Right Nasal Fossa, With Acute Frontal Sinusitis and Orbital Cellulitis. Perry G. Goldsmith.
96 Smallpox—Notes on Eighty-Nine Cases. W. F. Bryans.
97 Tubercular Disease of the Tubes with Acute Peritoneal Infection. Herbert A. Bruce.
98 Traumatic Paralysis of the Right Recurrent Laryngeal Nerve. H. E. Tremayne.

American Gynecological and Obstetrical Journal (N. Y.), November.

99 The Relative Advantage of Vaginal and Abdominal Section; an Illustrative Case. B. F. Baer.
100 Further Contribution to the Study of Pelvic Hematocele and its Relation to Tubal Pregnancy. George Tucker Harrison.
101 *Injuries to the Bladder and Ureters in Radical Surgery of Cancer of the Uterus. J. Wesley Bovée.
102 Sarcoma of the Uterus Associated with Fibroma of the Round Ligament. Report of a Unique Case. John G. Clark.
103 A Fibromatous Uterus in Labor. Frank A. Stahl.
104 Report of Interesting Cases. Frank W. Talley.
105 *Ophthalmia Neonatorum; its Pathology, Prophylaxis and Treatment. John E. Weeks.
106 A Further Contribution to the Study of Full-Term Ectopic Gestation. Edwin B. Cragin.

Medical Review of Reviews (N. Y.), Nov. 25.

107 The Disposal of Putrescible City Waste. F. C. Curtis.

St. Louis Medical and Surgical Journal, December.

108 Twenty-five Cases of Extra-Genital Chancre Observed in 1897, 1898 and 1899. A. H. Ohmann-Dumesnil.
109 The Essential Features that Constitute a Potent and Efficient Antiseptic, Germicide, Antiphlogistic and General Healing Agent. Wm. Hooker Vail.
110 Rectitis; Operation Advised and Refused; Blood Cured. T. J. Biggs.
111 Aphrotone. Wm. Hooker Vail.

The Laryngoscope (St. Louis), November.

112 President's Address, American Laryngological, Rhinological and Otological Society. D. Braden Kyle.
113 *Pathology of Adenoid Growths. Charles W. Richardson.
114 *Adenoids from the Standpoint of Hemorrhage. Irving C. Kimball.
115 *Nasal Synechia. M. D. Lederman.
116 Myxo-Fibromata of Unusual Size. W. Peyre Porcher.
117 An Unusual Case of Traumatic Rupture of the Membrana Tympani. George L. Richards.
118 A Case of Hysterical Deaf-Mutism. Gordon King.

Richmond Journal of Practice, November.

119 *Renal Calculi, with Report of Cases. Stuart McGuire.
120 Malaria—Its Etiology, Symptoms and Diagnosis. H. Stuart McLean.
121 Treatment of Retrodisplacements of the Uterus. Edward McGuire.
122 Bone Inflammation and Sequences. Hugh M. Taylor.

Louisville Monthly Journal of Medicine and Surgery, December.

123 *The Medical and Surgical Treatment of Acute and Chronic Lymph-Nodes of the Cervical Region. H. Horace Grant.
124 Medical Observations Abroad. August Schachner.
125 Report on the Use of the Subarachnoidean Injection of Cocain in Labor. Walker B. Gossett.
126 Neurasthenia: A Clinical Lecture (to be continued). Curran Pope.

Charlotte Medical Journal, November.

127 The Treatment of Some Forms of Gastrointestinal Derangement. W. Hosea Moss.
128 Hemoptysis and Treatment. James A. Burroughs.
129 *Renal Calculi, with Report of Cases. Stuart McGuire.
130 Report of Fourteen Years' Work in Abdominal Surgery. F. F. Lawrence.
131 Mental Failure from the View Point of the Physiologist. J. F. Peavy.
132 How to Resuscitate the New-Born Infant. C. W. Canan.
133 The Value of Glyco-Thymoline (Kress) in the Local Treatment of Diseased Mucous Membrane. George A. Hewitt.

Illinois Medical Journal (Springfield), December.

134 *The Treatment of the Opium Habit by the Bromid Method. Archibald Church.
135 *Everyday Headaches. Hugh T. Patrick.
136 *Treatment of the Sac in Very Large Inguinal Herniæ. M. L. Harris.

Carolina Medical Journal (Charlotte, N. C.), November.

137 Living Animal Organisms in the Ear. Francis R. Packard.
138 Some Recent Surgical Cases. R. L. Payne.
139 Criminal Abortion—Medicolegally Considered. (Continued.) J. D. Roberts.
140 Strong Urethral Injections During the Acute Stage of Gonorrhea. P. C. Hutton.
141 Resection of Left Half of Inferior Maxilla, followed by Reformation of Bone. Geo. P. Reid.

St. Paul Medical Journal, December.

142 *Large Umbilical Herniæ. Charles A. Wheaton.
143 *Are National Leprosaria in the United States Desirable? H. M. Bracken.
144 Brief Notice of an Old Book. Franklin Staples.

Alabama Medical Journal (Birmingham), November.

145 Puerperal Infection: Its Causes and Prevention. Seale Harris.
146 Some Views on the Race Problem. R. C. Bankston.

St. Louis Courier of Medicine, November.

147 Chronic Sprains. Robert W. Lovett.
148 *The Home Treatment of Tuberculosis. William Porter.
149 *The Functions of the Ovary. C. R. Dudley.
150 Calculi of the Kidney and Ureter. Henry Jacobson.
151 Some Observations on a Case of Internal Hemorrhoids. Felix Garcia.

Georgia Journal of Medicine and Surgery (Savannah), November.

152 Treatment of Appendicitis. James B. Morgan.
153 The Modern Woman, Her Abhorrence of Maternity and the Sequel. Ralph M. Thomson.
154 Difficult and Obscure Pus Cases in Pelvic Surgery in Women. Walter B. Chase.
155 Increasing the Therapeutic Value of Cod-Liver Oil by the Addition of Free Iodin and Free Phosphorus. Louis J. Lautenbach.

New England Medical Monthly (Danbury, Conn.), December.

156 Observations on a Few of the Medical Questions of To-day. C. B. Newton.
157 The Treatment of Morphin and Liquor Habit Compared. C. E. Patterson.
158 Life and Evolution. J. L. Wolfe.
159 Sedatives. John O. Jones.
160 Degenerative Results of Defective Heredity. Charles Denison.
161 Creosotal (Von Heyden) in the Treatment of Pneumonia and Acute Bronchitis. J. W. Frieser.
162 The Therapeutic Value of Urotropin. Emil Suppan.
163 Hypodermoclysis. G. A. Gilbert.

AMERICAN.

1. **Hypospadias.**—Beck first notices the frequency of this condition and the inconvenience and sterility which usually accompanies it, and discusses the different methods of operation to relieve it. The method that he has followed, of which he reports three cases, consists in dissecting free and dislocating the urethra forward so that a new canal does not have to be created, the existing urethra performing its function. The internal surface of the tube remains intact, the urine does not come in contact with the wound itself and the use of the catheter can be discarded. He gives the technique of his methods in full, for which the reader is referred to the article itself. How apparent are the advantages of his method for forward dislocation is best illustrated, he says, by the many more or less useful modifications which have been proposed during the short space of three and one-half years since its introduction.

2. **Enlarged Prostate.**—The various operative measures for the relief of enlarged prostate are reviewed by Guitéras. The ligation of the internal iliacs is a matter of ancient history; castration has had its day, and vasectomy is little used in this country. The two operations most in vogue are prostatectomy and the Bottini operation, each of which has its advantages. The indications that should help to decide which operation to perform, are: 1, age of the patient; 2, size and shape of the prostate; 3, the condition of the kidneys and liver. Age is important, as the older the patient the less the resisting power; therefore, in very old men if the prostate is of the right variety, the Bottini operation is preferable, though old age is not in itself a contraindication to prostatectomy. Very large prostates, such as have the feel of an apple or orange on rectal examination, are favorable for enucleation, while smaller ones in which there is a distinct impediment in the prostatic urethra on introducing instruments, together with a considerable quantity of residual urine, are the best for the Bottini. The condition of the bladder is less important than that of the kidneys, for treatment will do much to benefit it; but bad kidneys are always contraindications, and if they are damaged in any way and operation is demanded the Bottini should be the choice.

though not itself entirely free from danger. The technique of both operations is described. The author's own method of performing prostatectomy is by what he calls the recto-vesical method, though no part of the operation proper is performed by the rectum, the fingers being simply inserted into it to exert direct counter-pressure and guide the operating finger. He first performs suprapubic cystotomy, putting retention sutures into the bladder wall on each side of the incision. A careful rectovesical palpation is then made with the first and second fingers of the left hand while the right finger is in the bladder, and a visual examination is made with an electric light inserted into the bladder. A pair of closed scissors are then introduced into the surface of the enlarged glands until the blades are felt to press the prostate against the fingers of the left hand in the rectum, which recognize whether the scissors are in the right position or not. The blades are then opened and a cut is made through the bladder tissue covering the gland in a line corresponding with the space between the two fingers and the rectum. The forefinger of the right hand is then inserted into this cut through the bladder and gradually works its way between the capsule and the gland. Counter-pressure with the rectum fingers is kept up and the tumor enucleated by the right forefinger. The gland having been enucleated, there is always free hemorrhage, and very hot water should be injected for two or three minutes through the suprapubic opening while the surgeon washes his hands. He then passes a grooved sound, preferably a lithotomy guide, through the urethra into the bladder; having brought the patient into the lithotomy posture, he rapidly cuts through the membranous urethra and pushes a large perineal drainage-tube into the bladder, which he fastens to one side of the perineal incision. The finishing steps are to put two catheters into the bladder suprapubically, with gauze drain beside them and into the cavity made by the removal of the prostate. Fasten these into the skin of the bladder wall; then sew the bladder wall up to the drain. The surgeon then closes the abdominal wall, including the fascia, muscle and skin, as far as the drain. The floor of the posterior urethra should be cut through from above downward before the perineal tube is left permanently in place, to prevent the formation of a pocket, which would retard the cure. The after-treatment consists in an enema and a hot bottle to the feet, the free administration of water and the hypodermic injection of strychnia, 1/30 of a grain every four hours, with a repetition of hot saline enema alternating with the strychnia. The suprapubic tube can be removed in a week, and the perineal one in two or three weeks. Drainage in these cases through the suprapubic opening is by the siphon method, into bags hanging at the side of the bed. It is well, both before and after the operation, to give urotropin in 10-grain doses three times a day. A milk diet of two or three quarts a day is advisable. The bowels should be moved by some saline water on the second day. In conclusion, he says that he considers the operation of prostatectomy still in its infancy and it will some day be simplified.

4. **Mammary Abscess.**—Field advises the use of general anesthesia in cases of mammary abscess, as the condition may require it. He was brought to this view by the case here reported. It is impossible in deep inflammation to know in what direction the pus has burrowed or how many lobes may be affected, and this can be determined under general anesthesia and operation performed.

5. **Mastoid Abscess.**—Wright remarks on the development of the anatomical conditions of mastoid abscess with special reference to cases reported by Harrigan in a former number of the *New York Medical Journal*. He says early recognition of the site of the perforation with adequate treatment should prevent mastoid complications in those affecting primarily Prussak's space with perforation of Shrapnell's membrane.

6. **Placenta Previa.**—According to Donoghue, in reviewing the opinions of various authorities, together with analysis of cases that are made, Cesarian section is preferable in placenta previa over other operations in: 1, cases of complete previa; 2, in cases of previa in primiparæ when signs of fetal or maternal exhaustion are evident; 3, when the condition of rigid os is present; 4, where there is a history of previous operative delivery; 5, in transverse positions, and in cases of prolapsed cord when the cord is not easily returnable. It is the easiest of all celiotomies and in nearly every large community it is possible to obtain an operator capable of performing it under strict aseptic and antiseptic precautions, and the second operation is easier than the first. He reports a case where the operation was performed in a 4-roomed country house, with an ordinary country nurse, with such appliances as were readily available, and with complete success.

11. **Tropical Ration.**—In this installment of his paper Kean describes the conditions in the United States army as compared with foreign armies, and notices the required tropical diet. He thinks that the appetite is lessened by long-continued heat and is more capricious, and that there is a greater demand for the carbohydrates in the form of fresh vegetables and fruits, with a less need for fats or the heat-producing foods, and less stimulating proteids in the form of meat. He favors the use of ice freely, holding that this is not merely an acquired habit, but is of value in diminishing the amount of water required, and also as preventing the soldiers from taking water from surface wells, thus guarding against infection.

14. **The Suprarenal Gland in Hay-Fever.**—Somers' experience with twenty-one cases of hay-fever treated by the use of the suprarenal gland internally has not been favorable to this remedy, and not only the hay-fever itself, but the attacks of asthma which occur habitually during the hay-fever season were increased and became more intense. He believes the drug had a causal action in producing this symptom. Other unpleasant symptoms were nausea and a sense of chest contraction preceding the asthmatic attacks. He does not deny the value of the remedy in its local application, but considers it not warranted for internal use.

15. **Sanitation in Havana.**—Bispham gives an account of the deplorable sanitary condition existing in Havana at the time of the American occupation, the unsewered condition of the city, the foul markets, hospitals and unclean stables, cabinets, etc., and the improvement which has been made under the American administration.

17.—See abstract in THE JOURNAL of November 3, p. 1172.

18. **Electrolysis in Tumors.**—Neftel calls attention first to the fact that the originator of electrolysis and galvanization for treatment of tumors was Gustav Crussel, a Russian practitioner. He made his researches in the 40's, but was overlooked, although he completely and correctly laid down the rational indications for the treatment. He attributes the immunity from complications that follow this method largely to the escape of gases developed in the living tissue, especially ozone, peroxid of hydrogen, chlorin, which fact renders the electrolysis process the most efficient antiseptic; the part also played by the acids is mentioned. He considers it an ideal antiseptic, since it can reach the most hidden places and cavities inaccessible to other antiseptics. The article goes into detail as to the chemical and physical action of electricity, the effects of the current on the tissues, the action of the two electrodes, etc. He considers the treatment of benign and malignant tumors to be based on entirely different principles. In the latter our aim is to produce in one operation by the action of the anode, the necrotic destruction of the tumor and all the infectious germs of the surrounding tissues. This must be accomplished in the early stage while the disease is yet local and the lymphatic glands are not infected and deposits lacking in distant organs. The effect of such an electrolytic operation is the relief of all the morbid symptoms and complete recovery. The treatment of benign tumors is based on a different principle, that of inducing by the action of the cathode regressive metamorphosis, molecular disintegration, absorption and atrophy. The remainder of his paper is taken up with a description of cases.

19. **Infant Feeding.**—The most important point, according to Fischer, in infant feeding is to have pure cow's milk, which can only be obtained from a reliable dairy where all the modern sanitary rules are observed and the hygienic condition of the

cows is perfect. Antisepsis in the stable is essential. We should imitate nature in feeding; the infant receives raw milk from its mother, and we should, therefore, follow this in artificial feeding. The principal objection to raw milk is its contamination with various pathogenic bacteria, but this is reduced to a minimum if the above mentioned conditions are observed. The use of sterilized or boiled milk is liable to produce scurvy; it undergoes a sort of deadening in the action of heating or boiling. Phosphorus and ferric proteids are required to be given in a living form. Each child is a law unto itself and we must notice the following factors to be satisfied that it is thriving: 1. The infant must appear satisfied after taking its bottle. 2. No vomiting. 3. No colic. 4. The bowels must move at least once or twice in twenty-four hours with yellowish-white and medium-soft stools. 5. The infant should sleep from four to eight hours at a time during the night. 6. The weight, taken regularly once a week, should show a gain of at least 6 or 8 ounces weekly, and if no increase is observed the reason should be studied and by all means the food changed. He gives a tabulated statement of the quantity, proportion of water and the frequency of feeding for infants of all ages up to six to eight months. He agrees with the sentiments of Professor Jacobi regarding the use of modified laboratory milk. He has not found it so useful to children and the theory does not work well in practice. When the milk disagrees and the infant's stomach will not tolerate it, vomiting is provoked, or bowel disorders follow, milk should be stopped. In such cases he has seen good results in many cases follow the use of almond milk made by scalding or blanching almonds, then beating them up, using an ounce of water for each ounce of blanched almonds, rubbing up this mixture and then expressing it through cheese-cloth. This should yield an ounce of almond milk for each ounce of almonds used and can be made at home, and be found sometimes quite serviceable in the treatment of summer complaints. Dextrinization of foods, chiefly the cereals, is successful in children having subnormal gastric digestion. It should be used during illness only, and is not advisable for healthy children. Frequently the infant's stomach requires assistance in the assimilation of food, and an examination of the stomach contents hows a deficiency of hydrochloric acid. Hence it seems more beneficial to give the infant several drops of diluted hydrochloric acid after feeding. In conclusion he remarks that two drugs must always be considered in the management of infant feeding, especially in difficult cases: nux vomica and malt.

21. **Rectal Prolapse.**—The method described by Fowler consists in the use of the combined lithotomy and Trendelenburg position during operation under spinal cocainization, the patient being perfectly conscious and able to extrude the prolapse, thus doing away with the need of traction. A cuff at the mucocutaneous margin was turned back for the purpose of preserving the normal condition at the rectal outlet and at the same time permitting the removal of all relaxed and overstretched mucous and submucous structures at this point. It also provides a covering for the sutured edges of the stump of the prolapse and diminishes opportunity for subsequent infection. The third advantage in the operation is the step by step application of, first, a suture and then an extension of the incision through both cylinders to correspond with the sutured area, in this manner avoiding exposure of the peritoneal cavity to infection. He does not claim that this operation possesses all these advantages exclusively, but he has not seen these heretofore combined.

22. **The Mosquito Theory of Malaria.**—Grandy, while recognizing and accepting fully the mosquito theory, finds some difficulties in assuming that the plasmodium finds its life cycle exclusively through man and anopheles. If this is true, then the depopulation of a region for a short time would extirpate malaria, which is not the case. He suggests that while in a certain number of cases malaria is directly transmitted through man by anopheles, he thinks the latter can and do obtain the organisms from other sources than the human blood. All the arguments in favor of the mosquito theory apply equally well to this modification of it. The objection that malarial organisms have never been cultured artificially is not sufficient to overthrow the idea. No other parasitic protozoon has been cultured and yet they exist in various conditions. He also thinks that the objection that they have never been found free in nature is of little value, since they might easily be overlooked. This modification he holds comes nearer to filling all the conditions and answering all the objections than the other theory that requires the exclusive transmission of the germs through the cycle of man and mosquito.

23. **Post-Operative Complications from Heat-Stroke.**—Gibson believes that heat has caused certain unfortunate complications occurring after operations, and depressing weather should be considered by surgeons in this special point of view. He reports two cases of operations for appendicitis in which he believes the element of heat-stroke produced a very serious complication. In one the symptoms were gradually relieved by the application of cold, in the other the patient ultimately succumbed. He does not wish to say that the summer season is not favorable for operative work; on the whole, cases seem to do better, as they are more free from pneumonic disorders and the increased action of the skin supplements the efforts of damaged kidneys, and good circulation is kept up; but he wishes to call attention to the fact that the beneficial effects of heat may become misdirected when accompanied with unfavorable atmospheric conditions.

26. **Drainage.**—The purpose of this paper is to show that drainage, instead of being a necessity, is of value in comparatively few cases and of damage in others. Pond considers that the idea of drainage to prevent pus formation is unscientific, as its irritating action has actually the opposite effect. While we must still drain some of the septic cases, yet in abdominal injuries for instance, the peritoneum can take care of poisoned cells of infectious material better than it can make immune the surfaces constantly producing sepsis. Salt solution may be valuable in such cases; in sterile cases drainage is not only unnecessary, but absolutely detrimental.

32. **Acute Alcoholism.**—Bauduy considers that all forms of acute alcoholism have a tendency to self-limitation; that they always result from an access or abuse of alcohol, and not from any sudden withdrawal of the stimulant. He therefore claims that it follows as a corollary of the first of these statements that the treatment must needs be expectant. The systematic administration of opiates is unjustifiable and full of danger. He has had 1129 cases with only 14 deaths, a mortality of a little over .015 per cent., as compared with some statistics of others, who had a percentage of even 10 per cent. or more. He also would withdraw all alcoholics during the attack of acute alcoholism; there is no need of adding to the poison. In conclusion he recapitulates his ideas and holds that in this disorder, as in many others, the *vis medicatrix* is fully adequate to produce the happiest results.

39. **Laboratory and Bedside Diagnosis.**—The subject here considered is the comparative value of laboratory and bedside work. The author first notices the over-enthusiasm on the one hand and the ultra-conservatism on the other, and holds that the true position is nearer the former than the latter. He enumerates some of the causes of failure of laboratory work: first among these is the matter of personal skill. There are many physicians who have not the first idea how to recognize what they see under the microscope or in the tests, and he notices a few errors, mistaking leukemia for chronic malaria, urates for albumin in Heller's test, lint or scratches for casts, crenated red blood-cells or even the pale centers of normal red blood for malarial parasites, certain peculiar refracting lines for tubercle bacilli, etc. In the laboratory manager, besides skill, there is another qualifying factor, that of honesty, which requires him to avoid surmises and make sure that nothing that is said is without the limits of absolute certainty. Practitioners also fail to make proper specimens, frequently sending them in conditions in which laboratory examination is impossible; also failure to send the correct history of the case is a common fault, and lastly, he mentions the restrictions under which the laboratorian is often forced to work. Certain possibly useful tests are not desired when the labora-

torian could at once say that nothing could be obtained by the one demanded. To make the results of the laboratory worker in diagnosis compare with those of the clinician, we must first recognize the fact that in certain cases only direct examination of the patient is of value. In another class of cases the laboratory alone can furnish an accurate diagnosis, and this includes diabetes, renal affections, blood diseases, certain neoplasms, etc., and there is still a third class where a combination of both methods is required and certain others in which any given case may vary within wide limits. He sums up the practical points of his paper as follows: 1. Practitioners should possess sufficient knowledge of laboratory methods to apply them for themselves in simple cases. 2. Here, as in all specialties, the general practitioner should promptly recognize the cases which are beyond his own skill and refer them to an expert. 3. The practitioner may simply send material for examination where the nature of the required investigation is clear and where the character of the material permits, but he should at least know and follow the proper method for its collection and preservation, or, not knowing it, should take no step without informing himself on this point. 4. A brief history, containing only salient points, together with the apparent clinical diagnosis, should, if possible, accompany all specimens. 5. The laboratorian should be called in as a regular consultant in those cases in which the diagnosis is very obscure, and should be given full scope to make examinations in whatever direction he may deem best.

47. **Transmission of Sound in the Middle Ear.**—Zimmermann's paper argues against what he considers fundamental errors as regards the transmission of sound, viz., that sound is transmitted through the channel of the bones to the fenestrum ovale instead of being carried from the membrana tympani to the air of the middle ear and through it conducted to the lobule and capsule without needing any conduction through the channels of the ossicles. He tries to show the inaccuracy of some of the remarks and proofs advanced in the favor of the Helmholtz theory.

56. **Malaria Simulating Multiple Sclerosis.**—Cases of malaria affecting the nervous system are, as Spiller remarks, not rare, but the case here given is of value as showing the symptoms of multiple sclerosis, as intention tremor, localized ataxia, transitory hemiparesis, headache, vertigo, drowsiness, diplopia, nystagmus, scanning speech and exaggerated reflexes were all present. Malarial parasites were found in the blood-vessels throughout the brain and cord. The case shows that symptoms of disseminated sclerosis, as the author remarks, may result from irritating vascular lesions, imperfect nutrition and poisoning of the nerve cells without the formation of multiple-sclerosis foci. The paper also gives an interesting résumé of the literature of simular cases, and especially notices the paper of Torti and Angelini.

57. **Cortical Localization of the Sight and Hearing.**—Good reports a case, with post-mortem, in which there was blindness and deafness due to lesions in the left occipital lobe due to old embolic softening caused by blocking of the posterior cerebral artery in the left hemisphere, together with disseminated lesions in the corresponding region of the right. The cortex of the mesial surface of the right hemisphere, together with the greater part of the lingual and fusiform gyri, had been destroyed. On the convex surface the superior and middle occipital gyri were also involved in both. The only part of the brain the author found intact that had any relation with the vision was the right angular gyrus, which he thinks accounts for the little perception of sight the patient retained. The conclusions of his paper are as follows: 1. Destruction of the cortical visual areas will lead to a degeneration of the cells in the geniculate ganglia and the corpora quadrigemina, and to a degeneration of the nerve fibers of the optic tracts and nerves. 8. The macula lutea of one eye is in connection with the opposite angular gyrus.

58. **Leucocyte Count in Serous Pleurisy.**—From an examination of twenty cases of serous pleurisy where the leucocyte count was made daily, Morse concludes that serous pleurisy is only exceptionally accompanied by an increase in the number of white corpuscles, and then intermittently. The white count is of value in two ways in the diagnosis of serous pleurisy: If the physical signs are doubtful and there is no leucocytosis the condition is almost certainly not pneumonia or empyema, but serous pleurisy. If there is a serous pleurisy and a continuous leucocytosis, some complication is present. The white count in serous pleurisy affords no information as to the duration of the process, the amount of the fluid, and its increase or diminution. The number of white cells is not influenced by the presence of blood or microscopical pus in the fluid or by the degree of fever.

59. **Hepatic Cirrhosis.**—Frazier reports a case of liver cirrhosis in which operation was performed to open the channel for the relief of the obstructed portal circulation, and tabulates similar cases that have been reported. The indication for the operation is the presence of ascites due to obstruction of the veins of the portal system when the obstruction itself is due to cirrhosis of the liver, the liver being still functionally active. The technique of the operation is simple. Local anesthesia is preferable. An incision three or four inches in length is made in the median line or on the border of the rectus above the umbilicus. The peritoneum of the adjacent surfaces of the diaphragm, liver and spleen, respectively, and the peritoneum on either side of the wound are sacrificed with a blunt curette or rubbed with a gauze pad. The latter proceeding causes less bleeding, at the same time exciting sufficient peritonitis to insure adhesion. The omentum is sutured to the parietal perineum for a distance of three or four inches on either side of the wound, and to the margin of the wound itself. The evacuation of the fluid completes the operation, the wound being closed without drainage. Drainage has been used in several cases, but the author thinks it better to omit it as it can have no good effect on the lesion and introduces an additional element of risk. Frazier, while admitting that experience is as yet very limited, holds in properly selected cases where the liver cells are not yet devoid of function and where internal medication and paracentesis fail or where there is no serious contraindication the operation has a future. It is a last resort in hopeless cases, and it is so simple in itself and the danger so slight that the prospects of the mode of treatment becoming an established one seem bright. In his case the results were good.

61. **Irritable Bladder in the Female.**—In the conclusions of Bierhoff's article in regard to the question of irritable bladder, he says as follows: 1. The term "vesical hyperesthesia" or "irritable bladder" is in almost every case in the female erroneously applied. 2. As a true neurosis, vesical hyperesthesia rarely occurs. 3. Where vesical hyperesthesia exists it does so only as a symptom; in the majority of cases as a direct result of some change in the vesical mucous membrane, in the minority as an indirect result of change, in other organs adjoining or near the bladder. 4. The diagnosis of the causative factor must rest upon a thorough examination not only of the bladder, but also of the urethra and the genital and pelvic organs as well. 5. The treatment must be directed both against the local changes and the causative factors.

67. **Patella Fracture.**—The etiology of patella fracture is particularly discussed by Corner, who first notices the structural conditions. The fractures of indirect violence are those that are more particularly noticed. He thinks that the lower portion of the patella is its weakest point, and fractures where the upper fragment is larger are more numerous than those where the lower fragment exceeds. Fractures of the center or lower half of the bone form about 83 per cent. of the cases. Fracture of the patella by indirect violence is really due to exaggeration of natural forces that have given rise to the internal architecture of the bone. This is in accordance with the experience above mentioned. Besides the structure of the bone there is a still more important factor in localizing the situation of the line of fracture. This is the degree the knee is flexed at the time of the accident. The center-point of the bone varies a good deal, but for practical purposes it may be said to be just below the middle of the area of contact in semi-flexion, the condition in which 84 per cent. of the fractures occur. It would also appear that oblique fractures should

be more common, though few are reported, which is explained, he thinks, by the fact that small degrees of obliquity are overlooked. He finds also that fractures of the patella are less common in females than in males in a ratio greater than is the case of other fractures of the lower limb. Fractures are more common in males of the patella and in females of the femur. It is not infrequently the case that the patella is refractured, much more frequently than the long bones of the leg. This is explained by the mechanical conditions: its situation over an actively functional joint, and also to two other conditions due to the upright position, namely, an atrophic condition of the bone and the comparatively low situation of the femoral condyles, due to the relatively short ligamentum patellæ. Either the bone itself or the fibrous union may be severed, and the same predominance of males occurs in this accident as in the first fracture. He suggests that the failure of ossification of the bone is due largely to the fact that being a sesamoid bone it lacks a periosteum, and the osteogenetic power must therefore be comparatively small unless there is close approximation of the fragments.

68. **Suppurative Pericarditis.**—After reviewing the conditions and their literature, Porter sums up in the following conclusions: 1. Pericardotomy is indicated in all cases of suppurative pericarditis. 2. Because of the uncertain and varying relations of the pleura, and because of the anterior position of the heart whenever the pericardial sac is distended by fluid, aspiration of the pericardium is a more dangerous procedure than open incision when done by skilled hands. 3. Incision of the pericardium can be done quickly and safely by resection of the fifth costal cartilage, and in many cases under local anesthesia. 4. In many cases of serous effusion, open incision without puncture will offer less risk and speedier cure than aspiration. 5. The method and detailed technique of the writer proposed in 1897 have been followed out by the majority of recent operators. His paper also includes a report of a large number of cases taken from the literature.

69. **Inguinal Hernia in the Female.**—According to Macready's statistics, 8.5 per cent. of hernia of the female are inguinal, which exceeds the number of femoral hernia in both sexes, and forms 60 per cent. of cases of rupture in women. Coley, from a study of the literature, concludes that the treatment of this condition in the female does not receive the attention it deserves. While most authorities agree that herniæ in female children are more amenable to mechanical treatment than in the male, his own experience has led him to consider the difference as very slight, and he favors a more general recourse to operation. He disagrees with Kelly in his statement that the removal of the sac is of little importance, especially in small herniæ, and thinks it likely to do much harm. In support of his view he cites a series of cases observed during the year 1888-89. The method he has employed is practically that of the Bassini method employed in males, the only difference being that the transplantation of the cord is naturally omitted. He insists on complete asepsis and the advisability of using rubber gloves. As regards sutures, he thinks that the non-absorbent suture should be omitted in the local cure of hernia. As regards the technique of the operation, he has always believed cutting of the internal oblique muscle not only unnecessary, but likely to weaken the canal, and quotes Turck and Blake as supporting his opinion. He has, since 1892, operated on 123 cases of female inguinal hernia without any mortality; 73 of these patients were under 14 years of age and in only 8 cases did suppuration occur, in these slight and limited to stitch-hole infection. He has been able to trace all but 13 of his patients. The majority of these were well two to seven years after operation. He thinks from his results that prognosis is even better in the female than in the male, and the prospect of cure may be reasonably sure.

70. **Echinococcus Cyst of the Liver.**—During the past few years Fowler has been able to see five cases of this condition, one of which he reports. The historical data are briefly reviewed. Tenia echinococcus derived from the dog is the exciting cause. The diagnosis is easy in fully developed cases. The symptoms are those due to pressure effects. Hydatid fremitus, due to the impulse of the daughter cysts on one another in the absence of liquid in the parent sac, is noticed, as is also the Santini booming sign, which Fiaschi of Sydney considers a valuable aid in diagnosis. The disease untreated may progress indefinitely. Spontaneous cure may occur, or death may ensue in various ways. The parasite may die, and the sac may contract; but the usual way of spontaneous cure is by rupture into one of the neighboring viscera, stomach, intestine, lung or pleura. In the latter two cases the chances are unfavorable. In rare cases it may occur externally. The growth of the cyst is slow, ranging between fifteen and twenty years, or more. His method of treatment consists in stitching the sac wall to the edges of the wound in the abdominal parietes and then incising it either in one or two stages. In certain cases the cyst may be best reached by the transpleural route or through the lumbar region. The tension of the sac may be lessened by aspiration of a portion of its contents; it is important that none of the fluid escapes into the peritoneum. After incision the lining membrane of the sac is peeled off as completely as possible by a stream of warm solution directed between the lining and the fibrous capsules. The cavity is irrigated and packed daily until only a small sinus is left, which does not usually close readily. The healing process may take many months and a liver fistula may persist indefinitely. In those cases which admit of it, a hepatectomy may be performed to totally eradicate the disease. Cysts which are very large, or where a small amount of liver tissue is involved, may be subject to this procedure, but great care must be taken in selecting these cases. The methods and experiences of various surgeons such as Palleroni, Terrillon, Bergmann, Billroth and others are noted, and the author himself has assisted Professor Fowler in the removal of a large single echinococcus in the left lobe of the liver, which will be reported at a future date.

73. **Fracture of the Spine.**—Lathrop discusses the conditions and reports cases of spinal fracture, also reviewing the literature to a considerable extent. In conclusion he summarizes as follows: 1. In partial lesions we should operate. 2. Where the lumbar region is involved with lesions of the cauda equina, operation offers the best chance of recovery. 3. In fracture of the spinous process, lamina, or entire neural arch, operation is demanded. 4. Should immediate operation not be done, and we wait six to eight weeks, with the result that paralysis of the bladder and bowel continues, with cystitis and severe bedsores present, we may be sure that nature can not relieve the case, and an operation is not only indicated but demanded.

77.—See abstract in THE JOURNAL of October 20, p. 1051.

85. **The Care of the Insane.**—The relations of the state toward the insane are discussed at length by Kraepelin, who notices the causes of insanity, alcohol and syphilis especially coming under this general head. The article has been noticed in part editorially already. He also reviews the questions of organizations and says that the public institutions are far more progressive and advantageous to the state than the private ones. The questions of commitment and retention are also treated at length. He would advise retention to be made more difficult and commitment more easy. The backwardness of practitioners in insane asylums and the tendency to isolation and narrowness are mentioned, and he believes that frequent rests and change or travel would be of great value. The idea that places in these institutions are held simply by right of length of service, and not held by competition with others is, he thinks, a bad rule. It would be better to have changes instituted than to consider long services alone as a qualification for retention.

87. **The Alcohol Question.**—Forel gives his personal experience from a study of alcoholism and his change of view from moderate indulgence to total abstinence. He does not think the prohibition laws do not prohibit from his observation in the United States, but thinks that this country has gone backward a little of late years from the advanced position that it has held. The Americans are, he says, the leaders in anti-alcohol movement, and it is their duty to continue it.

101. **Injuries to the Bladder and Ureters.**—Bovée gives a short review of the history of the operative measures for such injuries and discusses their efficiency, which he thinks is hard to

demonstrate, as in ordinary hysterectomy for malignant growths they are seldom disturbed. They are more common, of course, in the vaginal than the abdominal operations. About their frequency, various authorities differ; Byron Robinson considers about 1 per cent. of the operations for hysterectomy are attended with ligated or cut ureters; Spencer Wells that one in every six cases. The treatment consists both in preventing their occurrence and in repairing them after the accident has occurred. He does not favor Kelly's method of catheterization of the ureters, and believes that it is liable to produce complications. He mentions for example urinary hemorrhages which occur sometimes after catheterization, and also a case noted by Cullen of the breaking of the bougie and retention of the fragment. The treatment he has followed has been to isolate the ureter, except from the perineum, early in the operation by making an incision through the peritoneum along its course from the division of the iliacs to the bladder. Then by passing a few pieces of suture material under it along its course and tying the two ends of each together we have the means for pulling it up into view at any time without injury. We can easily ascertain whether any part of the ureter has been removed, and the ureter work, if any, which is always an important complication, can be planned during the operation. The preferable method of ureteral anastomosis is the end-to-end one. Injuries to the bladder usually occur in separating this organ from the uterus and vagina with insufficient care, but in some cases the bladder wall is in a pathologic condition or abnormally thinned, rendering it impossible to avoid the injury. In cases of bladder puncture or incision, immediate closure with permanent bladder drainage for a few days will usually suffice. In late bladder sloughing and injuries discovered after operation, a second operation is usually required, though sometimes permanent catheterization suffices. Many cases of ureteral injury are discovered only after several days. Some of these close spontaneously, and some are cured by vaginoplasty. If the ureteral opening be large the fistula continues and a tedious operation will be necessary. He would postpone this until nine or twelve months have passed and no evidence of return of cancer has appeared.

105.—See abstract in THE JOURNAL of October 27, p. 1105.

113. **Pathology of Adenoids.**—Richardson describes the macroscopic appearances in adenoids, together with their microscopic structure, and analyzes the statistics as regards tuberculosis in these growths from various authorities. He finds that in over 1000 cases subjected to close microscopic scrutiny in only about 5 per cent. was there more or less pathologic evidence of tuberculosis stamped on the glandular hyperplasia. He asks if this is simply an accident or is it a more intense manifestation of the tuberculous condition which is manifested in a fair proportion of the remaining 95 per cent. but not shown by actual pathohistologic changes. He thinks there is some underlying pathologic condition or conditions responsible, called by whatever name you choose, lymphatic diathesis, scrofula, lymphatism, etc. In most of these cases the family histories, he thinks, will reveal certain conditions that have made their impress on the case; it may be syphilitic, tubercular, an ill-assorted marriage, or a conception in which one or both of the parents were below par at the time.

114. **Hemorrhage in Adenoids.**—The points which Kimball emphasizes are as regards the occurrence of hemorrhage in operations for adenoids as follows: 1. Thoroughness of removal and carefulness in technique at the expense of time. 2. The selection of instruments the best suited to perform the operation safely and efficiently. 3. The positive exclusion of the hemorrhagic diathesis. 4. Competent supervision of the patient until the danger from hemorrhage is over.

115. **Nasal Synechia.**—The causes of nasal synechia are described by Lederman, who points out the necessity of proper treatment after cauterizing or operating for obstruction to prevent these growths. He thinks the introduction of a certain kind of separator in many cases is very important, and has used the surgical sponge or spunk to advantage. In recent cases nature assists materially by absorption of a portion of the inflammatory exudate, causing a decided shrinking in what at first appears to be an extensive bridge. It is well to let this process of absorption exert itself to its full extent, as energetic manipulation often makes matters worse. When subjective symptoms are not pronounced it is good judgment to let the nose alone, of course, keeping the passages clean by some antiseptic spray. After a few weeks' rest we will frequently find improvement and better conditions for operation. In conclusion he calls attention to those forms of adenoid occlusions that have assumed extensive proportions, and undergone osseous change. Here the chisel, trephine and rongeur have to be employed before serviceable breathing space can be obtained. In such cases persistent dilatation must be carried out for some time to keep the opposite parts from reuniting.

119.—See also title 129.

123. **Cervical Lymph-Nodes.**—The surgery of cervical lymph-nodes is treated by Grant, who sums up his conclusions as follows: 1. The cause of tuberculous adenitis of the cervical region is almost always local, and takes place through the buccal cavity. 2. The glandular manifestation, when it progresses, and especially when it is followed by suppuration, indicates a damaged and usually useless, often dangerous, gland. 3. The removal of such a gland *in toto* and promptly is neither difficult nor dangerous, and is the treatment indicated. 4. Nature will probably provide a new and equally perfect protection in the place of the one that is lost. 5. Multiple enlarged glands indicate a constitutional tendency, which will not be benefited by removal, except when local discomforts and dangers indicate it. 6. Small groups of single, slowly growing glands are subject to the same indication.

129.—See also title 119.

134.—See abstract in THE JOURNAL, xxxiv, p. 1335.

135.—Ibid., p. 1334.

136. **The Sac in Large Inguinal Hernia.**—Harris considers that the removal of the sac in cases of very large inguinal hernia is often unadvisable, or at best it is not advisable to remove the scrotal portion of the sac. It may be drained for the first few days from its lowest point if thought advisable. The advantages of thus treating it are the saving of time in the operation, avoidance of danger of sloughing of the testicle and scrotal tissues, and lessened danger of sepsis. Of the three cases which he reports, in one, where the sac was removed, there was thrombosis, hemorrhage and infiltration; in the other two, in which it was left, there was no subsequent trouble, no cyst nor hydrocele developed and the sac and scrotum diminished remarkably in size by absorption.

142. **Large Umbilical Hernia.**—Wheaton illustrates two cases, before and after operation, of very large umbilical hernia and calls attention to certain points in the treatment of such cases. He thinks undoubtedly a hernia that has existed for a long time has, as an older writer expressed it, lost the right of habitation in the abdomen, but he believes that this can be regained, if not by a first at least by a second operation. The element of resiliency or non-resiliency of the contracted abdominal covering due to protrusion which lessens the resistance from within is the thing to be considered. All large non-reducible hernias, incurable by the truss as a preliminary operation, should have treatment in bed for a sufficient period of time to remove as far as possible the element of resistance before referred to, which is responsible for many failures. He holds that in almost all abdominal herniæ of adults which are due to conditions arising after childhood and many of which are technically not umbilical, that point becomes the strongest part of the wall and is responsible for strangulation which results from pressure upon the neck of the extruded contents. The relation which the omentum bears to the floating contents of the abdomen makes it a conspicuous organ in these herniæ. As a rule the protrusion comes through the median opening, the omentum first, followed by the floating contents from behind. Gradually as the tumor becomes larger the strangulation at the point of contraction brings about degenerative changes in the omentum and the adhesions between the omentum and intestine result in serious interference with the function of the latter, hence the gastrointestinal disturbance observed in these cases. From a successful experience

which he has had with large herniæ he offers the opinion that with good heart and sound kidneys no umbilical hernia is so large as to be the cause of practically bed-ridden existence to the patient. Most of the text-books in surgery advise operation only in favorable cases, but by the preliminary operation before suggested and an operation performed which is ideal as far as its technique is concerned we will save nearly all our patients.

143.—See abstract in THE JOURNAL of Nov. 10, p. 1235.

148. **Tuberculosis.**—The points made by Porter regarding the home treatment of tuberculosis, which is the only kind possible in the great majority of cases, are: The importance of early diagnosis, correct hygienic conditions, clothing, good feeding, exercise suited to the case, hydrotherapy, the control of night sweats, hemorrhage and cough. He speaks particularly of the creosote treatment and thinks there is danger of pushing it too far. It should be given rather in small doses than in large ones.

149. **The Functions of the Ovary.**—Dudley notices the more recent views in regard to the internal secretive functions of the ovary, calling attention particularly to the experiments of Knauer, Marchese, etc., and especially to the case of Glass where the transplantation of the ovary from another female seemed to re-excite the whole reproductive life. He thinks that the first function of the ovary coincident with its rapid development at the time of puberty is an internal secretion, and reviews the subject of ovarian therapy, quoting various authorities to show its advantages in amenorrhea, chlorosis, dysmenorrhea, cases of loss of ovary, etc.

FOREIGN.

British Medical Journal, Dec. 1.

Causes and Cure of Insomnia. JAMES SAWYER.—After first noticing the physiology of sleep, in which he rather indorses Foster's view that the essence of the condition is to be sought in the purely molecular changes, Sawyer passes to the etiology of insomnia. Secondary insomnia may be due to various causes such as pain, fever, or dyspnea, and these conditions are frequently met with in medical practice and treated by appropriate remedies. There is, however, a simple incapability to sleep which may be called insomnia *per se*—a kind of wakefulness for which we can find no obvious physiologic cause, and which seems to depend upon the incapability of the brain and nervous system to adapt themselves to sleep-conditions. This is generally met with in well-to-do persons of high mental endowment and neurotic temperament. It is a very important disorder, and if understood and properly managed, there is no disease more amenable to treatment. He divides this type into three classes: psychic, toxic and senile. The first occurs mostly in men of nervous temperament and is often due to shock or mental strain. It would seem that these causes may arouse a given group of cerebral cells into persistent activity or, if the strain has been less intense but long kept up, a monotonous group of ideas is maintained in exhausting recurrence. In either case it would appear that sleeplessness did not appear until there was a partial or complete vasomotor paralysis from exhaustion of the blood-vessels; the arterioles of the brain had lost their normal contractility. This point of view gives the best working hypothesis for the treatment. Toxic insomnia may be due to internal autogenetic poisoning as in cases of kidney insufficiency, or possibly to absorption from the gastrointestinal tract and constipation, but the causes which he holds most responsible are tobacco, tea, coffee, alcohol and gout. In this lecture he also mentions senile insomnia due to lessening resiliency and contractility of the vascular system. Senility is a relative term and it may be properly said that a man is as old as his arteries. The tendency of this condition of the blood-vessels of the brain to prevent, lessen or interrupt sleep is probably counteracted in many cases by the cardiac feebleness which it may be said coexists with the senile vascular changes.

Fundamental Points Connected with the Pathology of Diabetes Mellitus. F. W. PAVY.—The general trend of modern research, according to Pavy, is away from the idea that sugar is carried through the general circulation to be consumed by the tissues. Sugar is disposed of in the system normally in three ways; by transformation into fat, which is now an accepted fact; and into proteids in the villi; or into glycogen. The latter is not carried on exclusively in the liver; it seems to be one property of protoplasmic matter to form it when suitable conditions arise. If assimilation fails to be carried out in these ways the carbohydrates that can be taken up by a normal person without producing glycosuria can no longer escape doing so, and in proportion as the power is reduced, so is the curtailment of the amount of carbohydrate that can be taken without showing sugar in the urine. Very varying degrees of impairment of this type are found to exist in different cases, producing varying degrees of severity of the condition to be dealt with, and this needs to be taken into account in treatment intended to adjust the dietetic management. The fact of the voidance of sugar offers evidence that the system is overburdened with carbohydrate, and anything which conduces to its increase adds to the difficulty. Restoration of the assimilative power is needed and this is managed by the control of transit of sugar through the system from food. This kind of alimentary diabetes has a favorable tendency especially amongst people above the middle period of life, and it is not uncommon to have assimilative power restored so that the ordinary diet may be resumed. In other grave forms of diabetes, the elimination of sugar is in part derived from the tissues of the body as well as the food, and other products also arise from its abnormal tissue disintegration; oxybutyric and diacetic acids accompany the sugar and distinguish this form, which he calls composite as distinguished from the simple alimentary type.

The Face and Pupil in Alcoholic Neuritis.—Brunton calls attention to certain symptoms in alcoholic neuritis which he has not seen described in the literature. The first is the peculiar expression of the face, which becomes mask-like and expressionless; the lips appear to move apart separately from the cheeks, but they sometimes appear very mobile. The eyebrows and eyes may move in accordance with the lips, but a fixed and expressionless band stretches across the nose and cheeks between the eyes and lips. He has been able to diagnose alcoholic neuritis, provisionally at least, from observation in this way. Another point is the condition of the pupil reflex which is just the reverse of the Argyll-Robertson phenomenon. In a number of cases he has noticed that the reflex to light is rapid and extensive, whereas accommodation to near objects was slight and sluggish or entirely wanting, and in one or two cases he has observed dilatation instead of contraction on accommodation.

On the Causation of the Congenital Stridor of Infants. JOHN THOMSON and A. LOGAN TURNER.—The causation of congenital stridor of infants which is observed sometimes during the first, and part of the second, year, has been studied by the authors, who give their conclusions as follows: 1. The primary element in the causation of this condition is a disturbance of the co-ordination of the respiratory movements, probably due to some developmental backwardness of the cortical structures which control them. 2. The change of form found is merely an exaggeration of the normal infantile type, and is mainly, if not entirely, the result of a constantly recurring sucking-in of the upper aperture of the soft larynx, which is induced by the ill co-ordinated and spasmodic nature of the breathing. That it is, in fact, an acquired deformity strictly analogous to pigeon-breast. 3. There is no proof that any congenital malformation of the upper laryngeal aperture exists in these cases. 4. The supposition of a congenital deformity is not essential to account for the symptoms, inasmuch as normal babies crow in a very similar manner when they are coming out of chloroform. 5. The sounds are not produced in the pharynx. This is proved by the high-pitched phonic character of the crow, and also by the fact that the stridor persists, not only when the nostrils are closed, but equally when the mouth is occluded by the nipple, when the tongue is depressed by a spatula, and during yawning. They are not produced in the trachea by compression exerted by a large thymus or enlarged lymphatic glands. The stridor is probably produced partly in the larynx proper, and partly at the abnormally approximated aryepiglottic folds. 6. The neurosis causing the symptoms has not

in our experience seemed to depend on the presence of adenoid growths or other obvious causes of reflex irritation. They differ from Sutherland and Lack, who have written on this subject in not ascribing any primary etiologic importance to the peculiar conformation of the upper aperture found in these cases, and which they consider an acquired deformity and result of ill-co-ordinated breathing.

The Lancet, December 1.

Prognosis and Treatment of Pulmonary Tuberculosis. ROBERT MAGUIRE.—In this first lecture, after some preliminary remarks, Maguire divides pulmonary tuberculosis into three stages: invasion, progress and result. These may be co-existing in the different parts, but the division is really made on the general clinical syndromes. The resistance of the lung and body generally is also to be considered with special reference to prognosis. In the first stage we wish to obtain complete cure of the patient and absolute arrest of invasion and the return of the lung to its normal condition, though there may be remaining some tendency to re-infection. The prognosis is favorable in this stage. In the second stage we still hope for arrest of the condition, but only after a certain amount of damage has taken place which may give the patient no trouble if the tendency to further attacks be kept under control. In the third stage the prognosis is not nearly so good. We have here absolute destruction of lung tissue which can never be made good, and the most favorable outlook is vastly less favorable than that of either of the two preceding. Finally, if actual cure and arrest is impossible, we may still estimate the probable rapidity of the disease processes and the duration of life and comfort of the patient. The physical symptoms of the first stage are noted, the earliest one being a slight attack of resonance and of breathing sounds, limited to one point, usually the apex, showing a certain degree of collapse of the lung. The apex may not be the first point, though it is rare that the disorder commences at the base. The author has seen it in only 60 cases out of about 19,000 that have passed under his hands. It is unfortunate because these basal are much more favorable than the apex tuberculoses, and the latter are more so than those which begin in the middle lobe. According to Maguire's experience, which agrees with that of Bruce, tuberculosis beginning near the breast is, as a rule, rapidly fatal, though he would still further limit this by saying tuberculosis beginning in the middle lobe. Cases of multiple lesions indicate a greater intensity of tuberculous poisoning and greater vulnerability of the system in which they occur. These cases are noticed in their height in two forms: in one, which he has never seen described and which he calls the multiple pleuritic onset. The patient may not admit there is anything wrong, but suffers from vague ailments of varying types which are ascribed to rheumatism and neuralgia. A careful examination will show here and there perhaps a slight pleuritic rub, but no apparent consolidation and no respiratory distress. He knows of no beginning which bears a more unfavorable prognosis than this. After a short time patches of consolidation appear, cavities form and the whole system collapses. The next most serious form is what Bruce has called emphysematous phthisis and Jaccoud and Stokes named the suffocative form of tuberculosis. The patient complains simply of cough, choking in character, and difficulty in breathing. The physical signs are lacking, but if the physician is on his guard he will find tubercle bacilli; the temperature may be normal, but is sometimes irregular and the patient wastes and becomes gradually weakened. None of the ordinary remedies for bronchitis and empyema have any effect, and finally there is an outbreak of physical signs, increased weakness and general breakdown. It is one of the most serious forms of beginning tuberculosis. Still another form is mentioned, to which he gives no particular name, and the rule of thumb by which he recognizes it is, if the symptoms are out of all proportion greater than the physical signs, look out. The action on the tissue and its poisoning is in advance of the resisting power of the lung. There is irregularity of temperature sometimes becoming very marked and the patient may be kept in bed, with emaciation, weakness and loss of appetite. There may be no cough or a very slight one and the slightest possible physical signs. The condition is often attributed to persistent influenza, not infrequently to subacute rheumatism or to sheer neurotism. Time after time he has seen this apparent quiescent state give way to a serious breakdown with lung destruction and early death. If a name were demanded, he would call this latent tuberculosis. The conditions that may precede the outbreak and possibly conduce to its occurrence are noticed. Chlorosis is rarely an antecedent. Florid patients are more apt to be seriously affected than anemic individuals, and he attributes this to a tendency to vasomotor paralysis. Deformity of the chest undoubtedly predisposes to tuberculosis, the more so since it so often depends on primary tubercular disease of the bone and to what we call the scrofulous diathesis, but judging from his own experience, Maguire would say that the progress of pulmonary tuberculosis secondary to a pre-existing glandular affection is much slower and more favorable than when the lung tissue is primarily affected. The glands seem to form a resting place for the disease, which frequently can be extirpated with them. Among the most important disorders from a prognostic point of view which may precede tuberculosis of the lungs are pleurisy, serous or purulent, and pneumonia. He has already mentioned the serious outlook when scattered patches of pleurisy precede the disease, and it is remarkable, judging from the results of many observers, how often an apparently simple pleurisy is really tuberculosis and yet how comparatively seldom pleurisy is followed by pulmonary involvement. From actual observation he does not think breakdown of tuberculosis following pleurisy is so serious in prognosis as those forms that have not been preceded by this affection, and the occurrence of pleuritic effusion in the course of pulmonary tuberculosis, especially in the invasion stage, seems to be actually beneficial provided it is not removed. When empyema occurs and has been removed by operation, it is remarkable how seldom it is followed by pulmonary tuberculosis. Pneumonia is an essential element of pulmonary tuberculosis and gives rise to the physical signs from which we form our diagnosis, but pneumonia, not of itself tuberculous, but occurring in a person predisposed to the disease, does not materially affect the progress of subsequent tuberculosis. Most pneumonias affect the base of the lung, and tuberculosis starting there is, as has already been stated, rare and slow in progress. Pneumonia of the apex not necessarily tuberculous is generally followed by complete resolution of the lung, even more so when the base is affected. Urinary tuberculosis, beginning as such, remains so for a long time as a rule, but near the end of such cases one does meet with lung tuberculosis, but the lung trouble usually plays only a minor part in causing the death of the patient. The influence of hereditary tendency can be by no means ignored, and whenever present he has found it seriously to affect the gravity of the case. While most of his patients were sedentary in their habits, a curious exception is noted among the Polish-Jew tailors of London, who live under most unsanitary conditions, and yet rarely have tuberculous affections, though they suffer greatly from bronchitis and other catarrhs.

The Treatment of Certain Chronic Abscesses by Simple Aspiration. WILLIAM H. BENNETT.—After reporting several cases in which aspiration was employed for tuberculous abscesses with good results, the author remarks that he does not wish to advocate the indiscriminate use of this treatment to the exclusion of the more scientific method by free incision and scraping. All he wishes to do is to point out that aspiration in the method here performed is of value in certain cases where treatment by the other method is extremely undesirable and often disastrous. The slight difficulty in the matter of sterilization and slight inconvenience to the patient are its advantages. The essential points are, besides absolute surgical cleanliness, to be sure to cease to withdraw the contents the moment any sign of blood shows itself, and not to allow the abscess to regain more than one-half its former size before aspirating again. This last applies not only to the original tapping, but also to recurrent ones. The more slowly the fluid is withdrawn the better.

Annales de Gyn. et d'Obst. (Paris), October.

Puerperal Sepsis. DRAGHIESCU.—The method of treating puerperal sepsis at Bucharest is by systematic irrigation of the uterus whenever, after delivery, the patient has a chill, temperature of 38 C., and pulse 100. The uterus is then packed with iodoform gauze moistened with a 5 to 10 per cent. solution of phenic acid. The gauze slightly distends the organ and by direct contact cauterizes the surface and promotes uterine contractions. It is renewed twice in twenty-four hours. The patient recovers more rapidly with this than with any other method of treatment, and affections of the adnexa, etc., and phlebitis are much less frequent. The mortality has ranged from .05 to .22 per cent. of all accouchements since this treatment was instituted in 1895. There were 3 deaths, or .13 per cent., of 2047 deliveries in 1899.

Treatment of Puerperal Eclampsia. PORAK.—According to Porak, eclampsia is an autointoxication of intestinal origin. He therefore treats it by copious flushing of the bowels, using 30 to 50 liters of tepid, 7 per 1000 salt solution under weak pressure. This irrigation brings at last a discharge of pure bile, and then he desists. Infusion into the blood is also an important aid. He considers the convulsions of reflex origin, and consequently forbids all food or drinks by the stomach, and if obstetrical intervention is necessary, abolishes the reflexes by profound narcosis. Since he has been treating eclampsia on these principles he has had only five die out of forty-seven cases, and two of these deaths could not be attributed to the eclampsia.

Anterior Colpohysterotomy for Chronic Inversion of the Uterus. G. SPINELLI.—The finger is introduced into the inverted organ through a transverse incision in the cervix, and the anterior wall is then incised on the median line to the bottom. The uterus is then turned right side out, the incisions are sutured and the organ is replaced. There is much less tendency to the formation of adhesions by this anterior intervention than by the usual posterior incision.

Malignity of Hydatidiform Mole. F. LA TORRE.—Unless the stroma of the villi is involved, the mole is not malignant, and La Torre cites three cases in which the patients are still in good health two to eight years after spontaneous expulsion of a mole.

Autotransplantation of Ovary. MAUCLAIRE.—It is sometimes impossible to leave a sound ovary *in situ* during a salpingo-ovariectomy. In such cases Mauclaire urges transplanting the ablated ovary elsewhere instead of sacrificing it completely. He has thus transplanted the ovary in seven women under the skin of the median incision or in the inguinal region, but he was obliged to remove it later in four cases, as the organ proved septic. In the three others it healed in place and is still palpable, several months later. Menstruation has continued regular in one of the patients with a transplanted ovary after bilateral salpingo-ovariectomy. Pozzi does not approve of the procedure, as he thinks that the transplanted organ will be absorbed or expelled as a foreign body. He believes that the disturbances attributed to the premature menopause have been very much exaggerated. Bouilly has noticed that women near the menopause are apt to suffer more from these post-operative troubles, suggesting an "ovarian habit." Jayle has recently called attention to the necessity of carefully testing the functioning of the ovary before operating. If there are evidences of ovarian insufficiency there is little advantage to be derived from saving the organ.

Annales de l'Institut Pasteur (Paris), October.

Autosecretions of Microbes. J. DANYSZ.—In the course of attempts to immunize the anthrax bacillus against the bactericidal action of rat serum, Danysz has become convinced that the microbe is dissolved by a diastase which it secretes itself, and that the action of this diastase becomes pathogenic when it is no longer held in check or compensated. This diastasic action and the appreciable pathogenic symptoms noted in consequence of the supposed action of alexins, and probably also of lysins and toxins, on living organisms or tissues may be produced by this substance secreted by the cells themselves, and in this case specific antitoxins would have no direct influence on this substance nor on the symptoms which it originates. It follows, therefore, that if there is usually a diastasic element in the action of alexins, lysins or toxins, it need not be inferred that these substances are diastases or that they contain any.

Annales des Mal. Gen.-Ur. (Paris), September.

Neuropathic Hematuria. LANCEREAUX.—The hematuria was always preceded by pains in the joints. This suggested that quinin might prove useful, and experience has emphatically confirmed this assumption, the quinin in doses of .8 to 1.5, supplemented by hydrotherapy and rest.

Bulletin de l'Acad. de Med. (Paris), November 20.

Treatment of Cancer With Anticellular Serum. WLAEFF AND H. DE VILLIERS.—With blastomycetes derived from malignant tumors the writers have succeeded in immunizing animals and have produced an active serum in pigeons, hens and geese. This serum injected in patients with inoperable cancer arrests the tumor in most cases and leads to its retrogression for a time. Wlaeff claims that this improvement is sufficient to transform an inoperable into an operable tumor. The serum has been tested by several of the Paris hospital physicians as a last resort in inoperable cases, and all concur in proclaiming its entire harmlessness, and the subjective benefit derived. The pain and functional disturbances are certainly much improved; strength, appetite and sleep return, but these effects may be due to suggestion. On the other hand, the modification in the tumor is objectively apparent. It diminishes in size, contracts, becomes harder, hemorrhages cease or are less frequent. The ulcerations may become partially repaired and the involved ganglia also diminish in size. But this modification is transient, in every case the neoplasm resumed its course sooner or later. The anticellular serum does not have a very firm scientific foundation, as the connection between the blastomycetes and cancer is still disputed. Berger observes, after watching its effects on about a dozen patients, that the precarious character of the improvement attained with anticellular serum should not prevent resort to it when indicated, as even transient improvement is a great boon in many cases.

Presse Medicale (Paris), November 21 and 24.

The Liver Function in Infantile Gastroenteritis. E. TERRIEN.—Exact tests of the absolute functioning of the liver in nurslings have not yet been made on a comprehensive scale, and tests of the ureogenic function have been so fraught with errors that the results have no value. Terrien has been studying the glycogenic function of the liver after establishing that alimentary glycosuria is very frequent in infantile gastroenteritis, and that it can be considered pathologic whenever it appears with ingestion of less than 4 grams of pure glucose to the kilogram of body-weight, or 3.5 of pure lactose. The absence of alimentary glycosuria does not necessarily indicate that the liver function is normal; too many causes outside of the liver may co-operate in this result. But if the test is positive, an insufficiency of the liver is evident, as Terrien has demonstrated that the factors of the renal permeability and the glycolytic power of the tissues are more important theoretically than practically in these cases. The same applies also to the absorbing power of the intestinal walls. Whether the barrier is in the liver, or in the liver and intestines combined, it is evident that this barrier has been broken down and that it allows the glucose to pass and also probably the soluble poisons and intestinal toxins. This is a plausible explanation for the emaciation and cachexia that persist with progressively increasing alimentary glycosuria after cessation of the symptoms of the gastroenteritis.

November 24.

Relations Between the Nitrogen and the Chlorids in the Gastric Juice. J. WINTER AND A. FALLOISE.—The theory generally accepted in regard to the process of digestion is based too exclusively on peptonization in vitro, and leaves many of the phenomena of digestion unexplained. Peptonization is in reality merely one isolated phase of gastric digestion. According to the theory advocated in this communication, there is no

true secretion of hydrochloric acid. This acid, free and in combination, is formed in the cavity of the stomach. This theory conflicts with our preconceived ideas in regard to digestion, but it harmonizes with all the known facts, and even allows us to anticipate and foretell the phenomena. It reveals the existence of multiple connections between the organism and the gastric juice. The results of tests are tabulated which show that there is absolutely no proportion between the amount of nitrogen and the amount of hydrochloric acid in the gastric juice. They demonstrate, however, certain laws of proportion between the dissolved nitrogen and the organic chlorin in combination. The amount of nitrogen increases in proportion to the amount of bound chlorids and with the immediate product of their dissociation, the organic chlorin. This dissociation is influenced by the progress of the concentration. The organic chlorin appears as a transient combination correlated to the hydration of the nitrogenized matters. It is, therefore, possible to calculate the amounts of the chemical constituents of the gastric juice when one is known, as they are bound together by close and regular relations. The arguments and data demonstrate that digestion may occur in the total absence of free hydrochloric acid in the stomach contents. The presence of hydrochloric acid is merely an index of the rapid progress of peptonization. The results of the tests also proclaim that the reciprocal dependence between the organs extends also to the most infinitesimal particles dissolved in the gastric fluid.

Revue de Med. (Paris), November.

General Paralysis in Malaria. MONTYEL.—An etiologic connection was apparent in eight cases observed by Montyel. Paralysis on a malarial foundation is almost always rapidly progressive. Acute malarial infection, he asserts, may induce general paralysis or pseudo-paralysis in the predisposed. Chronic malaria may produce the same effect and may even originate general paralysis in the non-predisposed. The malarial infection frequently causes cerebral congestions, which complicate and aggravate the paralysis.

Semaine Medicale (Paris), November 21 and 28.

Toxic Dyscrasia Complicating Diabetes. R. LEPINE.—Three important works have been published this year on the cyanogen compounds and nitriles. Lépine thinks that the facts presented have some bearing on the etiology and treatment of the toxic dyscrasia of diabetes. Sternberg has suggested that beta-oxybutyric acid might be derived from beta-amidobutyric acid. He established that the latter acid produces in the dog and cat symptoms resembling those of diabetic coma, acceleration of the pulse, increased amplitude of respiration and coma. It is much more toxic than beta-oxybutyric acid, as it kills in the dose of one gram per kilogram. It is generally supposed that oxybutyric acid is derived from the fats, but some experts still maintain that proteid substances are also a source of oxybutyric acid and eventually of amidobutyric acid. Although Sternberg's hypothesis can not be proved yet it is supported by the similarity in the symptoms, and the fact that as amidobutyric acid becomes hydrated, it generates beta-oxybutyric acid at the same time that it liberates a molecule of ammonia. This may prove to be one of the sources of the excess of ammonia noted in diabetic urine in case of toxic dyscrasia. The chemical equation corresponding to amidobutyric nitrile and amidobutyric acid suggests a possible origin for the amidobutyric acid. The hydration of a molecule of amidobutyric nitrile generates a molecule of amidobutyric acid and also a molecule of ammonia. There is here a second source for the excess of ammonia in the urine. We know that albuminoid substances contain complex nitriles, harmless originally, but if molecular subtraction occurs by the action of suitable reagents, these nitriles become formidable poisons as they are simplified, as for example cinnamic nitrile, whose toxicity is equal to that of hydrocyanic acid. Applying these data to the question of the toxic dyscrasia complicating diabetes, Lépine asserts that if beta-amidobutyric acid be not the actual causal agent of diabetic coma, the latter is probably due to some other derivative of the complex nitriles which form an integral part of our tissues. Filehne asserts that the organism becomes accustomed in time to any poison given in repeated doses, but the researches of Heymans and Masoin, reported in the *Arch. Int. de Pharmacodynamie*, 1900, vii, establish that this is not the case with the poisons in question in this case. Fiquet's study of the properties of the nitrile-phenols, (*Jour. de Phys.*, 1900, September) shows that the introduction of a phenol—especially if carboxylated—into the molecule of a nitrile abolishes its toxicity. He suggests the possibility that the phenols will enter into combination with the toxins in the organism and thus annul their toxicity. As some of the phenols are very slightly toxic, Lépine remarks that the various facts cited justify the attempt to utilize the phenols in the treatment of the prodromic stage of diabetic coma. In the meanwhile he advises careful surveillance of the kidney, daily use of a slightly diuretic mineral water, and prolonged, large doses of sodium bicarbonate, inhalation of oxygen, and in case of imminent coma, intravenous infusion of possibly two or three liters of an alkaline salt solution, made very slowly, auscultating the heart occasionally. Subcutaneous injections are dangerous in diabetes.

November 28.

Determination of the Amount of a Pleural Effusion by Methylene Blue. NICLOT.—This colorimetric estimation of the quantity of fluid in the pleura has been found accurate in an experience of three cases. It is based on the principle that a certain amount of methylene blue introduced into the effusion will stain it a lighter or darker color according to the amount of the fluid. By comparison with a test-tube containing some of the unstained fluid, the quantity can be gauged with mathematical exactness.

Archiv f. Ophthalmologie (Leipsic), October 23.

Conjunctivitis Petrificans. T. LEBER.—Since Leber first described in 1895 the acute process of calcification to which he applied the term in the title, he has had occasion to observe and follow three cases of typical and three others which differ in some respects from the exact type described. The process differs from ordinary calcification as the lime is still in an organic, crystallizable combination. Two or three similar cases are on record from preceding centuries, one stated to be the result of witchcraft. The lesion first appears as white opaque spots, with no inflammation nor subjective disturbances, or very slight if they occur. It resembles the action of a caustic, especially of lead-water. The affection progresses spasmodically, new foci appearing and others healing or lingering for weeks, months or even years. The possibility of complete retrogression of the conjunctival process is in striking contrast to its severity. The smaller foci vanish completely by absorption or elimination of the affected tissue but the more extensive leave the membrane slightly thickened and shriveled at the spot, but not at all in proportion to the extent of the lesion. A tendency to recurrence may remain but gradually becomes attenuated, although in some cases the attacks recur in endless succession terminating in blindness. Weak antiseptics may prove useful at first, but later, no irritating substance is tolerated. Warm, moist compresses favor the expulsion of the necrotic tissue, Excision of the focus, when possible, abbreviated the attack and rendered recurrence milder. No microorganisms could be discovered, but the propagation of the lesions by contact favored the idea of a microbian origin.

Congenital Corectopia. E. V. HIPPEL.—Examination of an eye enucleated on account of traumatism showed a condition of congenital corectopia and luxation of the lens, confirmed by investigation of the other eye. The iris had been pulled backward by a connecting strip of solidified vitreous substance containing an artery and two or three veins. The luxation of the lens had been secondary.

Centralblatt f. Chirurgie (Leipsic), December 1.

Improved Technique in Use of Gigli Wire Saw. L. GIGLI.—The fine serrated wire is now supplemented by an improved drill and inserter designed by Gigli for the purpose which are described and illustrated in this communication. The drill has a large handle projecting outward and downward from one side, with a semicircular portion which fits over the skull of the patient and steadies the whole instrument.

Deutsche Med. Wochenschrift (Leipsic), November 15.

Specific Biologic Test for Albumin. UHLENHUTH.—The biologic method described is said to surpass in accuracy and delicacy any chemical test. Rabbits were treated with a solution of albumin from the eggs of hens or pigeons, injected repeatedly into the peritoneum or ingested per os. The serum of the animals acquired the property of rendering turbid a solution of the albumin and causing a precipitate to be deposited. The reaction does not occur with albumin from any source but eggs. The serum can be heated to 60 C., without losing this specific property.

The Freezing-Point of the Blood in Typhoid Fever. WALDVOGEL.—The results of comprehensive study of twenty-four cases of typhoid fever are tabulated. They prove that a higher freezing-point of the blood is not necessarily indicative of uremia. It is evidently not so much the quantity as the quality of the toxic substances retained in the blood that causes the disturbances in uremia. The freezing-point is higher in certain cases of typhoid fever—probably a phenomenon directly connected with the formation of antitoxin. In the cases in which the freezing-point is only slightly above normal—below .7—the prognosis of the disease is generally unfavorable.

Muenchener Med. Wochenschrift, November 27.

Hereditary, Progressive Spinal Atrophy of the Muscles in Children. J. HOFFMANN.—The disease commences in healthy children during the first year of life, first noticed as a symmetrical, lax, atrophic paralysis of the thigh and pelvic muscles, extending to the muscles of the back, abdomen, neck and shoulders in turn, with a descending course in the legs and arms. Death follows in one to four years from secondary pulmonary affections, caused by the paralysis of the thoracic muscles. The intelligence and senses are normal and there are no bulbar symptoms. Hoffmann has had six patients with this disease, all in four families not at all related, but with a record of twenty-one cases in all. Energetic treatment of various kinds proved totally ineffectual. The autopsy findings in three cases out of three families coincided in every respect: symmetrical, very pronounced degeneration of the peripheral neurons of all the motor nerve pairs below the hypoglossus, degeneration of the multipolar ganglion cells of the anterior columns and of the anterior roots, degeneration of the motor peripheral nerves and intramuscular nerve ramifications, with muscular atrophy and degeneration proportional to the lesions in the spinal cord. Bruns has recently reported three cases of the same disease, differing only in the longer survival of the children, who are now 11 to 14 years old. Werdnig published the first description in 1891, with two cases, and two have since been reported.

Three Hundred Autopsies of Suicides. A. HELLER.—The autopsies were made at the Pathologic Institute at Kiel, and the findings demonstrated that nearly 50 per cent. of the so-called suicides had been mentally irresponsible, and consequently not actual suicides. Of the seventy women, 47.4 per cent. were menstruating, pregnant or convalescing from childbirth, the first forming 35.9 per cent. Syphilis seemed to be a factor in the suicides to a certain extent; eight subjects had syphilis and six syphiliphobia, fostered by charlatans, frightening, pretending to treat and then collecting blackmail from them. In only 8 per cent. of the entire number of suicides were no traces of pathologic lesions to be discovered, including a few in advanced putrefaction.

Practical Method of Rendering Cow's Milk Easily Digestible. VON DUNGERN.—The cow's milk can be boiled first. Just before using, it is heated to body temperature and slightly coagulated with a small amount of rennet, then stirred to break up the curd, which restores the milk to nearly normal appearance. Children relish it the same as before, but all danger of the formation of large, hard curds in the stomach is entirely obviated. Aseptic rennet for the purpose is now prepared for the market. This method has been extensively tested by von Dungern and others with entire success.

Grece Medicale (Syra), November.

Repeated Laparotomies in Peritoneal Tuberculosis. J. GALVANI.—This communication describes the excellent results obtained in chronic peritoneal tuberculosis by laparotomy systematically repeated as many times as indicated. In 20 cases he performed a second laparotomy in seven days to twenty-three months after the first. Some died from intestinal perforation, but many were cured. Two patients required three laparotomies, one four and another five. Galvani therefore asserts that systematic repetition of the laparotomy will save many patients now abandoned, as it were, after the surgeon has done one laparotomy.

Annali di Ost. e. Gin. (Milan), xxii, 4 and 7.

Veratrum Viride in Eclampsia. L. MANGIAGALLI.—Veratrum has proved unfailingly effective in arresting the convulsions in eighteen cases of puerperal eclampsia in Mangiagalli's experience during the last four years.

Gazzeta Degli Osp. (Milan), November 25.

Mistakes in Diagnosis from Presence of Pseudo-Tubercle Bacillus. E. BENVENUTI.—A case is described diagnosed tubercular gangrene of the lungs, but the autopsy disclosed the entire absence of indications of tuberculosis. A bacillus was found in abundance closely resembling the tubercle bacillus, but differing in certain points. It is evidently the same bacillus that has been found in butter, in cases of pulmonary gangrene and in the dejecta of animals by Rabinowitsch, Petri, Moeller and others, the pseudo-tubercle or smegma bacillus. In the case described the bacilli might have been derived from the stomach, which would explain the indol reaction noted. Others have probably made the same mistake; for instance, the case related by Tuffier at the Paris Société de Chirurgie last March of a woman with tubercular gangrene of the lungs who recovered completely after pneumotomy. The bacilli found in the sputa and assumed to be tubercle bacilli must have been the spurious variety, as otherwise such complete recovery after mere pneumotomy is inexplicable.

Change of Address.

E. Amberg, 32 Adams St., to 102 Miami Ave., Detroit, Mich.
J. H. Bird, 511 N. Garrison, to Grand and Easton Sts., St. Louis, Mo.
J. O. Bolduc, New Era Bldg., to Gerald Bldg., Chicago.
G. Campbell, 820 Grand Ave., to 3428 Morgan St., St. Louis, Mo.
G. C. Crandall, 511 N. Garrison, to Grand and Lindell Sts., St. Louis, Mo.
J. M. Craig, Battle Creek, Mich., to Sanitarium, College View, Neb.
O. N. Carr, 400 Walnut Ave., Austin, Ill., to 1326 Ogden Ave., Chicago.
H. Cushman, Washington, D. C., to Wapello, Iowa.
J. M. Cooper, Ft. Worth, to Arlington, Tex.
Lewis W. Dudley, 2613 Indiana Ave., to 3700 Cottage Grove Ave., Chicago.
R. C. Elmore, Acona, to Black Hawk, Miss.
C. W. Geyer, Chicago, to 70 S 4th St., Aurora, Ill.
W. A. Hall, Chillicothe, to Springfield, Ohio.
A. Hernelsdorf, 429, to 438 Lincoln Ave., Chicago.
J. G. Hilleary, Estes Park, to 1650 Tremont St., Denver, Colo.
F. M. Jones, Evansville, to Stephens Station, Ind.
M. J. Kellner, 205 Lincoln Ave., to 364 Larrabee St., Chicago.
G. H. Litsinger, Milford, to Riley, Kan.
W. D. Leach, New Sharon, to South English, Iowa.
F. L. McKee, Plymouth, Pa., to Search Light, Nev.
H. Mikel, McCredie, to Columbia, Mo.
D. B. Manchester, Beverly, Mass., to Oneonta, N. Y.
C. E. McCauley, Monango, N. D., to Ashton, S. D.
Smith McMullin, Castle Rock, Colo., to Green River, Wyo.
J. R. Powell, Masonic Temple, to 19 Wisconsin St., Chicago.
W. R. Washburn, McLeansboro, Ill., to Army and Navy Hospital, Hot Springs, Ark.
S. G. Wright, Lafayette, to Covington, Ind.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., November 29 to Dec. 5, 1900, inclusive:

George W. Adair, major and surgeon, U. S. A., member of a retiring board convened in Chicago.

Harold L. Coffin, lieutenant and asst.-surgeon (recently appointed, with rank from Nov. 19, 1900), is assigned to the 39th U. S. Inf. Vols.

Daniel C. Cooney, acting asst.-surgeon, orders directing annulment of contract revoked, leave of absence granted.

Charles H. Fischer, acting asst.-surgeon, from Fort Apache, Ariz., to Washington, D. C., for annulment of contract.

Valery Havard, major and surgeon, U. S. A., leave of absence from the Division of Cuba extended, he will report at Washington, D. C., to the surgeon-general, on official business, thereafter resuming his status on leave of absence.

James H. Hyssell, major and surgeon, Vols., honorably discharged from the service of the United States, to take effect Dec. 19, 1900.

Theodore C. Lyster, lieutenant and asst.-surgeon, U. S. A., leave of absence from the Division of Cuba extended.

Henry I. Raymond, captain and asst.-surgeon, member of a retiring board convened at Chicago.

Charles W. Thorp, acting asst.-surgeon, from Denver, Colo., to San Francisco, Cal., to accompany troops to Manila, P. I., and for assignment to duty in the Division of the Philippines.

J. Samuel White, acting asst.-surgeon, from Manheim, Pa., to San Francisco, Cal., to accompany troops to Manila, P. I., and for assignment in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending Dec. 8, 1900:

P. A. Surgeon R. S. Blakeman, ordered to be examined December 10, at Washington, D. C., for retirement, and thence home to wait orders.

P. A. Surgeon A. W. Dunbar, ordered to the *Vermont* for duty with the crew of the *Wisconsin* revoked; ordered to duty at naval hospital, Mare Island.

Asst.-Surgeon W. M. Carton, ordered to the Washington navy yard.

Surgeon C. Biddle, ordered to the naval hospital, Norfolk, Va., for temporary duty.

Asst.-Surgeon E. J. Crow, detached from the *Monadnock* and ordered to the *Culgoa*.

Pharmacist J. Cowan, detached from the *Monadnock* and ordered to the *Culgoa*, and to additional duty at the Cavite naval station.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine Hospital Service for the seven days ended Dec. 6, 1900:

Surgeon H. R. Carter, granted extension of leave of absence for 15 days from December 1, on account of sickness.

Surgeon C. T. Peckham, granted leave of absence for two months from December 17.

Surgeon S. D. Brooks, granted leave of absence for five days from December 11.

Surgeon W. P. McIntosh, to proceed to Perry, Ga., for special temporary duty.

P. A. Surgeon G. B. Young, granted leave of absence for three days.

P. A. Surgeon H. W. Wickes, granted extension of leave of absence for ten days.

P. A. Surgeon L. E. Cofer, upon being relieved from duty at Los Angeles, Cal., to proceed to Honolulu, H. I., and report to Surgeon D. A. Carmichael for duty.

Asst.-Surgeon Hill Hastings, relieved from duty at the Columbia River quarantine, Astoria, Ore., and directed to proceed to Los Angeles, Cal., and assume command of the service, relieving P. A. Surgeon Cofer.

Asst.-Surgeon H. B. Parker, to proceed to Magnolia and Fayette, Miss., and St. Joseph, La., for special temporary duty.

Asst.-Surgeon C. W. Vogel, upon being relieved from duty at the San Francisco quarantine to proceed to San Francisco, Cal., and report to medical officer in command for duty and assignment to quarters.

Health Reports.

The following cases of smallpox, yellow fever and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Dec. 8, 1900:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, Nov. 12-24, 3 cases.
Kansas: Wichita, Nov. 17-Dec. 1, 10 cases.
Kentucky: Lexington, Nov. 17-Dec. 1, 3 cases.
Illinois: Cairo, Nov. 27, 1 case.
Minnesota: Duluth, Nov. 8-22, 54 cases: Minneapolis, Nov. 24-Dec. 1, 1 case: St. Paul, Nov. 8-22, 2 cases: Winona, Nov. 24-Dec 1, 60 cases: the counties of Carlton, Kandiyohi, Le Seur, Lyon, Meeker, Pine, Ramsey and Wright, Nov. 8-22, 73 cases.
Missouri: St. Louis, Nov. 23-Dec. 3, 3 cases.
New York: Nov. 24-Dec. 1, 34 cases.
Ohio: Nov. 24-Dec. 1, Ashtabula, 7 cases; Cleveland, 34 cases, 1 death.
Pennsylvania: Allegheny, Nov. 24-Dec. 1, 1 case.
South Carolina: Greenville, Nov. 24-Dec. 1, 3 cases.
Tennessee: Nashville, Nov. 24-Dec. 1, 1 case.
Texas: Nov. 22, Blue Springs, present; Sublime, 14 cases; Vashti, present.
Virginia: Alexandria county, Dec. 5, 1 case.
West Virginia: Harrison County, Nov. 28, 18 cases: Wheeling, Nov. 24-Dec. 1, 2 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Nov. 10-17, 29 cases.
Ecuador: Guayaquail, Oct. 6-Nov. 17, 40 deaths.
Egypt: Cairo, Nov. 3-11, 1 death.
France: Paris, Nov. 10-17, 15 deaths.
Gibraltar: Nov. 3-11, 1 case.
Greece: Athens, Nov. 10-17, 2 cases, 1 death.
Mexico: Tampico, Nov. 11-18, 4 deaths; Vera Cruz, Nov. 17-24, 1 death.
Russia: Moscow, Nov. 3-10, 2 cases; Odessa, Nov. 10-17, 14 cases, 7 deaths: St. Petersburg, Nov. 3-10, 2 cases, 2 deaths.
Scotland: Glasgow, Nov. 17-23, 24 cases, 2 deaths.
Spain: Barcelona, Oct. 27-Nov. 3, 48 deaths.

YELLOW FEVER—UNITED STATES.

Louisiana: 40 miles south of Natchez, Miss., Nov. 27, 5 cases.
Mississippi: Natchez, Nov. 27, 1 case; Osyka, Dec. 4, possibly 1, fatal.

YELLOW FEVER—FOREIGN AND INSULAR.

Cuba: Havana, Nov. 17-24, 14 deaths.
Dominican Republic: Puerto Plata, Nov. 3-17, 3 deaths.
Mexico: Vera Cruz, Nov. 17-24, 3 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, Sept. 29-Oct. 6, 2 cases.

PLAGUE—FOREIGN.

Africa: Cape Williamtown vicinity, Nov. 17, 6 cases, 4 deaths.
China: Hongkong, Oct. 13-27, 6 deaths.
Japan: Kobe, Oct. 15-27, 3 cases.

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